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ABSTRACT

The purpose of this investigation is to determine whether teacher attitudes are potent factors in learning situations and if pupils achieve at relatively higher rates in situations where their teachers' personalities are compatible with the dominant mode of teaching expected of them. The specified modes of instruction being considered are inductive vs. deductive approaches. The materials used to test the hypotheses are Anthropology Curriculum Project (ACP) materials--one set using the deductive mode given to the control group and a second set written in an inductive mode (in Appendix A and B) given to the experimental group. Thirty teachers and their classes in seven school districts in five states comprise the sample. Four ACP instruments measured pupil achievement, included in the appendices, and another instrument measured teacher personality variables. The major findings of the study indicate that there are no significant differences in achievement between the pupils of teachers who taught deductively and those who taught inductively, and that several teacher attitude patterns seem to be related to pupil achievement. An implication of the study is that more extensive research concerning the use of attitude inventories and other instruments for measuring attitudes and orientations should be undertaken. (Author/JR)

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RELATIONSHIPS OF TEACHER ORIENTATIONS AND EFFECTIVENESS UNDER INDUCTIVE AND DEDUCTIVE TEACHING METHODS

by

R. E. MYERS

A Thesis Submitted to the Graduate Faculty
of the University of Georgia in Partial Fulfillment
of the
Requirements for the Degree
of
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ATHENS, GEORGIA
1968

APPROVAL CERTIFICATE

RELATIONSHIPS OF TEACHER ORIENTATIONS AND EFFECTIVENESS UNDER INDUCTIVE AND DEDUCTIVE TEACHING METHODS

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R. E. Myers
Athens, Georgia
August 1968

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CHAPTER I

INTRODUCTION

Progress in education would seem to be assured if it could be shown that there are obvious and enduring advantages to presenting subject matter to learners in some ways and decided disadvantages to learners if subject matter is presented in contrasting ways. If it could be shown, with any degree of certainty, that individuals can acquire information or develop skills or use what they have learned more effectively as a result of being exposed to a particular kind of material or instructional technique, many (but by no means all) of the problems of educating people could be solved. This dream of discovering the most effective methods of helping individuals has prompted untold numbers of experiments and investigations at all levels of formal education. Earnest educational researchers will continue to compare teaching methods and materials; and, of course, they will quite likely fail to obtain convincing evidence that one way of teaching is better than another.

Researchers will be unsuccessful in producing convincing proof that one method is superior to another because the variables in one teaching-learning situation are seldom replicated in another. The human relationships are far too complex to identify, let alone to quantify. However, in keeping with proper scientific methodology, investigators will continue to attempt to describe the physical, sociological, and psychological features of two or more teaching-learning situations, even though they know that if it were possible to generalize about a group of individuals with some degree of accuracy what is said about the group will not be valid for many, and probably most, of the individuals in it. They keep on looking for persistent relationships between the intangibles and the tangibles, between "knowns" and "unknowns," between "givens" and "not givens," and between theories of behavior and behavior because momentary shafts of light are shed upon the formidable problems of educating people and because it is better to look than not to look at all.

Unfortunately, no two groups of individuals are truly comparable with regard to any of the criteria that are crucial to academic performance--motivation, experience, achievement level, capacity, and the like. To make the problem more vexing, if the same teacher instructs two or more groups, he really cannot be considered to be the same personality in each of the situations. He may respond to one group and to the individuals in it much differently than he does to another group and its members. Many factors will be the same if the teacher is his own control, and this arrangement gives some sort of validity to the results of the experiment; but when the predispositions of the teacher for different modes of teaching and for materials are taken into consideration, all that may be determined is that the preferences of the teacher are, to some extent, revealed.

The Problem

Inasmuch as no two teaching-learning situations are exactly comparable, it is not really feasible to attempt to determine which of two teaching styles is superior. Actually, every teacher's style is unique. The general approaches teachers take are capable of categorization, but their patterns of interacting with their pupils are individual. Therefore, a more reasonable strategy for discovering why some methods of teaching are apparently more effective than others might be to consider simultaneously personality variables and methods.

The purpose of this investigation is to determine (a) whether the attitudes of teachers are potent factors in situations where they are to teach in a specified mode (in this instance, an experiment which compares two contrasting methodologies of teaching history [illegible] inductive and deductive) and (b) if pupils achieve at relatively higher rates in situations where their teacher's personality is compatible with the dominant mode of teaching expected of him. The motivations, attitudes, and values of teachers would appear to be crucial to the achievement of pupils in any classroom, but these variables may be even more powerful in situations where teachers attempt to play the role of an "inductive" teacher or a "deductive" teacher.

Even though a teacher nowadays is well advised to be able to employ a number of varying teaching strategies, and although carefully conducted studies of classroom interaction (Amidon and Flanders, 1963; Bellack, 1965; and Fattu, 1954) have shown that effective teachers are ones who can change their behavior to suit the requirements of a teaching-learning situation, it would seem that the motivations, orientations, and attitudes of a teacher predispose him to respond to environmental stimuli (among which children are the chief elements) in certain ways. Further, it would seem that having a particular kind of orientation would help a teacher carry out a prescribed pedagogical role or would hinder his carrying it out. Terms such as inductive, deductive, and orientation are defined in the next section.

Definitions

The terms "inductive" and "deductive" provoke a wide variety of ideas and emotions in educational psychologists, curriculum builders, teachers, philosophers, and other persons who are concerned with pedagogy. Undoubtedly this lack of precision in defining the terms has led to much of the debate and inconclusive research regarding the merits of the two approaches to teaching, as Wittrock (1966) has suggested. The two terms were used in this study because no other appropriate terms could be found. However, the use of "ductive" seems to be justified inasmuch as Jarvis (1967) has used it to describe the materials and point of view of the Anthropology Curriculum Project of the University of Georgia: "The Anthropology Curriculum Project at the University of Georgia ... has chosen to develop its new elementary school curriculum materials in anthropology for closed-ended or deductive teaching-learning usage." On the other hand, the use of "inductive" as a label for such as those used in this study (to be described in the next chapter) has been challenged.

Along with many writers who have recognized that the terms are really inappropriate as descriptions of teaching as an on-going process (although they may be appropriate for certain *acts* or strategies), the investigator would like to avoid categorizing teachers as either "inductive" or "deductive." As Wilson (1968) says, "the distinction between inductive and deductive thinking is, in a way, spurious. In the classroom, in everyday life, in scientific inquiry--both processes are at work. We move from the general to the particular as well as, inductively, from the particular case to the generalization, but this process is seldom a neatly ordered sequence of steps. Instead a generative mind moves back and forth between the two levels--confronting the theoretical with the empirical, and vice versa." If the teacher possesses a "generative mind," he combines inductive and deductive approaches in his teaching and he encourages both types of thinking in his pupils.

Deductive Teaching

For the purposes of this study, however, it is necessary that the two terms be defined so that their use can be justified in describing the two philosophies of education which produced the Anthropology Curriculum Project materials and the experimental materials created for this study. Jarvis (1967) makes the position of the Anthropology Curriculum Project clear when he states that "the deductive method is the closely directed, explanatory process by which children are given generalizations along with supporting evidence and are helped by the teacher to draw valid conclusions. These generalizations, facts, and conclusions are taught and learned according to the taxonomy and the sequential ordering of the subject."

Inductive Teaching

The position of the investigator is expressed eloquently by Wilson (1968), who defines inductive procedures as those where reasoning from the particular to the general means "(1) starting with questions, including above all the student's questions, (2) thinking through to plausible answers, and (3) assembling and analyzing the data that enable a choice among the plausible answers, the hypotheses initially proffered." He adds that inductive procedures are devised so as to guard against "the authoritative transmission" of a gospel "from some pedagogical Sinai."

The two modes of teaching can best be distinguished by noting the order in which facts, rules, principles, and generalizations are dealt with by the teacher and his pupils. Learning inductively presupposes familiarity with a topic and a certain amount of information about the topic. The order of events for the pupil is: (1) discovery of facts; (2) tentative awareness of relationships among facts, observations, statements, or sets of relationships; and (3) organizing these perceptions and understandings into generalizations. In contrast, when the pupil is taught deductively the order is reversed. The teacher is the principal figure in the drama, and the sequence is: (1) presentation of generalizations, definitions, or principles; (2) presentation of facts, examples, and statements to support the generalizations, definitions, or principles; and (3) creation of situations in which pupils can discover other examples of supporting evidence or, more commonly, recognize phenomena as "belonging" to the generalizations, definitions, or principles that have been presented.

Generalization

The term "generalization" should also be defined, for it is used frequently in the definitions given above and is central to both conceptions of teaching. "Generalization" is used here in the sense that both Dewey (1912) and Rugg (1929) used the term. According to Dewey, "a generalization is the process by which a principle or law is reached; the term is also used to denote the product. The term expresses the use or function of induction which endeavors, beginning with a number of scattered details to arrive at a general statement." Rugg's interpretation of the term is quite close: "In drawing generalizations, either those that are stimulated by personal need in daily life or those stimulated by the setting up of problems in the school, the process is essentially one of analysis, of seeing relationships, but more fundamentally, it is the task of summing up in a single statement characteristics, traits, features, which are alike or unlike."

Attitude

Allport's (1937) theory of traits provides the foundation upon which the use of the terms concerning personality are used in this study. He states that ordinarily "attitude" should be used "when the disposition is bound to an object or value, that is to say, when it is aroused by a well-defined class of stimuli, and when the individual feels toward these stimuli a definite attraction or repulsion."

Orientation

An "orientation" is a disposition on the part of an individual to respond in a certain way to classes of stimuli. The stimuli may be people, ideas, objects, or other phenomena. The term is used almost interchangeably with "attitude" or "motivation" in this study, but the distinction between "attitude" and "orientation" is that the latter word incorporates a set of related attitudes or attitude patterns and is thus broader. Two orientations will be of particular interest in this study--a "freedom orientation" and a "control orientation." It would seem that deductive teachers might be more control-oriented, and that inductive teachers might be more freedom-oriented; these assumptions are made on the basis of descriptions of deductive and inductive teaching, but they have not, as far as the investigator knows, been supported by research evidence based on classroom data. These orientations will be discussed in greater detail in Chapter III.

Assumptions

Seven sets of assumptions were made before the study was begun:

1. Personality variables can be measured by questionnaires which require the respondent to answer "yes" or "no" to statements about himself. That is, it was believed that the Runner Studies of Attitude Patterns is a valid psychological tool for revealing attitudes and orientations.

2. The participating teachers would respond to questions in the Runner inventory honestly. It was assumed

that they would have no reason for trying to "fake the test." In addition, it was assumed that the conditions under which the teachers would respond to the questions would not influence their answers. In other words, the scores of the teachers would be reliable indications of their orientations and attitudes.

3. The scores of the pupils taking the Anthropology Curriculum Project tests would not be influenced significantly by the person administering the test. It was assumed that the testing conditions would be fairly uniform among the various classrooms.

4. The experimental teachers would use the exercises that were provided them and would read and understand the teacher's guide which accompanied the two booklets of exercises. The investigator assumed that all of the experimental teachers would attempt to teach the required 23 lessons inductively. Similarly, it was believed that the control teachers would read the regular Anthropology Curriculum Project materials carefully and that they would try to teach 23 lessons deductively.

5. A teacher's behavior is closely related to what his pupils learn and the manner in which they learn. As a consequence of a teacher's own values and of his personal system of rewards and punishments in the classroom, pupils process information and use it in certain ways.

6. The academic and out-of-school experiences of the participating teachers would not enable some to teach the unit on culture with much greater skill than others. That is, courses taken in college and experiences among peoples of various cultural backgrounds would not increase the effectiveness of some teachers over others with regard to the performances of their pupils on the tests.

7. The experimental and control classes would be matched fairly evenly with regard to the academic aptitudes and socio-economic backgrounds of the pupils. It was assumed that experimental classes would be equivalent to control classes in their capacities to learn facts and to form generalizations.

Although the overall skill of the teacher is a very important factor whenever teaching methods are compared, no assumptions were made as to the relative abilities of the control and experimental teachers. The investigator merely hoped that the assignments were made in a random fashion to teachers who were willing to participate in the study. Since ratings of teachers are notoriously unreliable, it was believed that any attempt to equate control and experimental teachers with regard to their competencies would have introduced additional problems into the study that would not have been compensated by any possible gains.

CHAPTER II

SURVEY OF RESEARCH AND RELATED LITERATURE

The problems that face educators today are multifold and knotty. This study is concerned with aspects of two of the basic questions that confront anyone who strives to make education in the United States more meaningful and more salutary for students: "What kind of a teacher will do the best job in the classroom?" and "What patterns of behavior will make him most successful in helping his students learn?" There are really two general complementary ways of trying to answer these questions for any particular teaching-learning situation--by looking at the teacher or by looking at his students. Actually, as most good observers of classroom interaction know, one should look at all of the individuals in the classroom. In this study, however, the investigator has chosen to focus upon the teacher, even though he agrees with Bower and Hollister (1967, p. 48) that "the problem which education and the behavioral sciences face is how to organize content and learning processes so that the individual becomes a more effective, freer, and creative ingester and user of knowledge." Their statement implies that someone other than the learner should be making decisions about organizing content and learning processes, but there are many educational psychologists who are convinced that the principal decision-maker should be the learner himself.

Although there is a good deal of evidence that teaching methods were undergoing careful scrutiny and probably would have been subjected to considerable critical analysis before the advent of Sputnik, there can be no question that education in this country has acquired a different aura in the years since 1957. One of the most significant trends in recent years is the tendency to view the teacher as a co-experiencer with his students. This tendency is partly the outcome of the so-called "knowledge explosion." Teachers are unable to pretend they are omniscient, even if they should be foolish enough to want to do so. Accordingly, many have adopted a more democratic attitude about the acquisition and dispensation of knowledge. They share discoveries with their students. Coinciding with this trend has been an emphasis upon translating the methods of science to the work of students in the schools. The result has been the proliferation of ideas of the scholars of this country and of others about how they attack their problems (Bruner, 1960, 1966) and a resurgence of the educational philosophy and psychology of the "progressivists" who advocated a "child-centered curriculum." Children, from kindergarten through high school, are accepted by a great many educators as being capable of defining problems, attacking them in a rather scientific manner, and then benefitting from their findings.

Modern Theoretical Bases for Inductive Teaching

Inductive techniques in the teaching of social studies derive from John Dewey's educational philosophy. These are some of the principal tenets in that philosophy which are particularly relevant to an inductive approach to teaching social studies in the elementary school:

1. Man is an active, not a passive being. One of a child's strongest urges is to interact with his environment; and, in Dewey's view, it is a correct impulse in the classroom.
2. A child's experience is fluent and vital.
3. Subject matter is not fixed; it is dynamic.
4. The best procedure known for learning and solving problems is the scientific method. Children should engage in experimental inquiry.
5. A democratic climate in which the teacher acts as a guide for his pupils is the best kind of teaching-learning situation.
6. Respect for the child, his needs, and interests is the sine qua non of a teacher's creed. A child is a worthwhile individual and is capable of learning a great deal.

Nowadays it is almost trite to say that Dewey has been misinterpreted by a large number of zealous followers who failed to read his works. However, the following quotations should support the inference drawn here that Dewey would probably have wholeheartedly supported the projects that have endeavored to infuse an inductive spirit into the social studies curriculum:

> It is continuous reconstruction moving from the child's present experience out into that represented by the organized bodies of truth we call studies" (*The Child and the Curriculum*, p. 11).
>
> The value of the formulated wealth of knowledge that makes up the course of study is that it may enable the educator to *determine the environment of the child*, and thus by *indirection to direction*. Its *primary value*, its primary indication, is for the teacher, not for the child. It says to the teacher: Such and such are the capacities, the fulfillments, in truth and beauty and behavior, open to these children. Now see to it that day by day the conditions are such that *their own activities* move inevitably in this *direction, toward such culmination of themselves*" (*The Child and the Curriculum*, p. 31).

Dewey recommended the "problem" method as one instructional technique which approached the kind of studying and learning which go on outside of school, "where data and principles are not found packaged under neat labels" (Wirth, 1966).*

Deductive Versus Inductive Teaching in Social Studies

Rice (1968) recently reported extensive research projects in social studies curriculum development by Peter Dow, Director of the Social Studies Program at the Educational Development Center in Cambridge, Massachusetts;

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*It should be noted, however, that Dewey did not believe in using an exclusively inductive approach; he insisted that the best way to solve problems was to employ both deductive and inductive thinking.

Fred H. Kresse, Director of the MATCH (Materials and Activities for Teachers and Children) Box Project of the Children's Museum, Boston, Massachusetts; the late Hilda Taba, Director of the Taba Curriculum Development Project of San Francisco State College in association with the Contra Costa County, California Schools; and John U. Michaelis, Director of the Asian Studies Curriculum Project of the University of California at Berkeley. These projects feature predominantly inductive methods.

There is a movement to keep the social science disciplines separate in elementary, junior high school, and high school curricula. Vincent Rogers (1962), for example, recommends that children address themselves to history as historians do and that they engage in a wide variety of activities in order to gain an understanding of the structural elements and underlying principles of history as a discipline. A similar approach has been taken in the University of Georgia's Anthropology Curriculum Project (Jarvis and Berryman, 1967).

The "case method" has become quite popular as a technique for teaching social studies in junior high school and high school, and Hunkins and Shapiro (1959) have reported that it was found to be superior to the lecture-textbook approach at the fifth-grade level. The element which seems to be advantageous in the case method is class discussion. The "concept unit" has also gained increasing approval as a way of fusing content and method for the social studies teacher. In the concept unit, according to Nelson (1965, p. 47), "the students are confronted with ideas and experiences which provide insights; the insights are tested and developed into generalizations; the generalizations are conceptualized as they become part of the student's cognitive structure."

Countless curricular materials have been created upon the premise that children should not only ingest information but they should be able to find it and process it. Accompanying these developments has been a concomitant mystique regarding the use of "strategies." An outstanding example of how a strategy or model can be formulated is given by Clements (1967, pp. 72-75). His strategy is designed to engage the pupil in social inquiry and is broken up into six tasks. The first task for the pupil is to identify a heuristic question which is interesting or exciting. The second task is to invent or choose notions, concepts, and ideas which may be used in clarifying, analyzing, and formulating the leading questions. Using the chosen notions, ideas, or concepts, the third task for the pupil is to translate the heuristic question into general questions which can literally direct the inquiry. The fourth task is for the pupil to focus his attention upon the evidence which is turned up as a result of asking the general questions. The pupil's fifth task is to cross-examine the evidence, forcing it to disclose what it can about the questions with which he is working. Finally, the sixth task of the pupil is to write a concluding report of what he has learned; he must come to some conclusion or interpretation.

Many other writers have advocated the employment of strategies by teachers whereby they can manipulate, or guide, their students. It is natural that the classroom, along with almost every other kind of theatre of human interplay, would be considered a place where these maneuvers would be called "games." According to Bellack and Davitz (1963, p. 3) games theory for the school goes along these lines:

> There are certain ground rules for the teacher and different but compatible ground rules for students. The pupils' roles are much more restricted than are those for the teacher. The core of many teaching sequences is a teacher's question, a pupil's response, and the teacher's reaction to that response. The "moves" made by typical teachers and pupils in playing the classroom game are essentially a question and answer pattern of interaction.

In many situations, a teacher withholds approval or will not allow the game to continue until a "correct answer is produced by one of his students." This type of classroom interaction is concerned with convergent thinking in Guilford's (1960) terminology. There is one correct response, and the students are supposed to produce it. In this kind of teaching-learning situation the teacher is in control, and he is the final authority about most of the questions and problems that arise from curricular activities. Of course, this game presupposes that the teacher is in possession of the correct answers, and so the tendency is for him not to co-experience with his pupils.

There are still a great number of teachers--perhaps a majority of the country's elementary teachers and certainly a majority of our secondary and college teachers--who play this game. In fact, it is the basic methodology of the University of Georgia's Anthropology Curriculum Project. Jarvis (1967) has clearly set forth the pedagogical philosophy of the Project in this way:

> The Anthropology Curriculum Project at the University of Georgia ... has chosen to develop its new elementary school curriculum materials in anthropology for closed-ended or deductive teaching-learning usage.... The deductive method is the closely directed, explanatory process by which children are given generalizations along with supporting evidence and are helped by the teacher to draw valid conclusions. These generalizations, facts, and conclusions are taught and learned according to the taxonomy and the sequential ordering of the subject.

In contrast to the developers of the materials for the Anthropology Curriculum Project, more and more educators are advocating that open-ended questions and discovery techniques be employed by teachers at all levels of formal education. The number of projects that have formulated deductive teaching methods in their rationales is small indeed in comparison with the projects that have developed inductive techniques.

Results of Comparative Studies

Ratcliffe and Baker (1968) found that sixth-grade pupils who used reference materials as a primary source of guidance in learning about "world civilization" learned more information about their unit of study, had higher interest levels, and developed more positive attitudes toward the unit than control pupils who used the textbook as their main source of instruction. Dooley (1968) compared inductive and deductive materials for teaching economic concepts to culturally disadvantaged fourth-grade children and found that "materials utilizing the inductive method, when compared with materials using the deductive method, may enable subjects to achieve significantly higher gain scores" on tests of economic facts and concepts.

Poissen (1964) investigated the effects of three teaching methods upon the problem-solving skills of pupils in the sixth grade. One method used a process of searching and self-discovery. Another used a deductive process where simple facts and generalizations were told by the teacher. A third method was deductive in nature but detailed explanations of the causal relationships underlying the concepts were also incorporated into the lesson plans. The results of this study showed that "students trained in the use of inductive procedures exhibit some characteristics of effective problem-solving behavior more frequently than pupils taught by the deductive method." Single concept science films were used by Reese (1967) to compare inductive and deductive methods with 1670 sixth-grade children in Alberta, Canada. Greater total gains were scored through the use of the deductive film. Boys did better with the inductive method, and girls did better with the deductive method.

Grannis (1966) found that high achieving sixth-grade pupils could learn abstract concepts as a result of a "learning situation which was almost purely inductive." He comments that the inductive approach "greatly increased the difficulty of the task, since, as other research suggests, a combined inductive and deductive approach to the learning of a concept would be more effective than either approach separately." His subjects were required to recognize new cases of the concepts which were taught, and thus the criterion for acquisition was application, in Bloom's Taxonomy of Educational Objectives: Cognitive Domain (1956), rather than recall of definitions.

Gagnon (1966) concluded from his doctoral study, which dealt with an experimental method for teaching thinking and clarifying values, that teachers need special instruction before they are able to ask probing, thinking, and value-type questions. Teachers using his methodology were able to demonstrate positive changes in their pupils' potential thinking, as measured by tests of thinking.

Reese (1967) compared interest level and problem solving accuracy with the use of single concept inductive and deductive science films to teach sixth-grade children and found that there was a greater covert response with the use of the deductive film than from that obtained with the use of the inductive film. Covert responses were measured by photographing each subject's eye twice a second as he responded to the stimulus film. Using the same stimulus films, Reese found his sample of fourth-grade pupils responded significantly better to the deductive approach. He concluded that, when presenting factual information to elementary school children, it is more efficient to use a deductive methodology. However, as others have advocated, he recommends that teachers vary their methods to suit the objectives of their lessons.

In Russia, Antonova (1967) found that more intelligent elementary school pupils showing concretely-oriented thinking profited more from a deductive style of teaching and that the less intelligent pupils with similar patterns of thinking profited more from an inductive type of instruction. The findings were reversed, however, for those intelligent pupils whose thinking was more oriented toward the verbal and logical; they profited more from inductive teaching. Pupils who were at a lower intelligence level with this style of thinking benefitted more from a deductive type of instruction.

Werdelin (1967) found a deductive method was superior to an inductive method and also a combination inductive-deductive method with respect to retention for sixth-grade pupils in Sweden. The inductive approach was found to be superior with regard to transfer.

Davis and Tinsley (1967) observed 44 junior high school classes for 30 minutes each and recorded the verbal interaction on the Teacher-Pupil Question Inventory. Both teachers and pupils asked more memory questions than all others combined (a finding which has been obtained in numerous other studies of teacher-pupil interaction). Next in frequency were interpretation and translation questions. The authors described the intellectual atmosphere of the classes as "meager." They recommend that (a) more attention be given to different cognitive abilities in social studies classrooms and (b) increased, specific understanding of questioning and its purposes and improved questioning skills be included in teacher education programs.

Relevant to the present study in which observers visited each of the control and experimental classrooms, Weisse (1967) found that daily observations will stimulate teachers to maintain a high level of proficiency. The investigator knows of no study which was designed to include observation as a dependent variable, but it seems reasonable to assume that observation does affect teaching performance and that it affects teachers with different personality patterns in various ways.

Several writers have sharply criticized these inductive versus deductive studies. Wittrock (1966), for example, makes these complaints about much of the research which has attempted to compare the two approaches:

1. In too many of the empirical studies concerning the two methods, the treatments are not operationally defined. "There often are no principles described which could be used by another researcher to generate the same types of treatments to replicate the study."

2. Although they are called experiments, many of these methodological studies are really not experiments. Intact groups are frequently used and little attempt to hold constant confounding variables is made.

3. The statistical analysis of the data obtained is omitted sometimes and is often given cursory treatment.

4. Although they are not justified in doing so, frequently the investigators extrapolate the results of their studies to a wide range of populations unsampled in the research.

Benosky (1968) wonders if the whole business of imposing inductive and inquiry methods is worthwhile. Gage and Unruh (1967) doubt that the strategies approach is any more helpful, arguing that "reducing molar teacher behaviors to molecular learning principles is unlikely to be fruitful."

Although methodological studies, such as those cited here, are usually cursed by design difficulties and confounding variables, the investigator believes that a good deal of benefit accrues to the teachers, pupils, and administrators who carry out these investigations. The teachers learn more about their pupils and how they can instruct them; and the pupils, especially in the experimental classes, are forced out of their ordinary patterns of reacting to their books and teachers.

Wilson (1968) brings the issue into proper perspective when he states that while he is vitally interested in promoting inductive teaching he does not wish to "betray the need for (and the beauty of) deductive reasoning." In other words, it is ridiculous for any educator to maintain that only inductive or deductive techniques will work--they are usually used _in conjunction_ with one another.

Although there have been a few attempts to emphasize deductive approaches to teaching social studies in the elementary school, most of the effort to infuse the curriculum with methodological vitality has been to follow the lead of educational psychologists and psychologists such as Bruner (1960, 1966), Suchman (1961, 1964), and Torrance (1962a, 1962b, 1965). The reason so few innovations have been planned along deductive lines is obvious: since the social studies have been traditionally taught in a highly deductive fashion throughout the formal levels of education, there has been no need to create new programs based on tell-test-review formulas. Actually, teachers of the social studies have been reluctant to adopt new modes of teaching geography, history, political science, economics, and the other disciplines, as the investigator knows from an experience in which he tried to persuade junior high and high school teachers to consider other approaches than the ones they had always used. Whether the trend will endure for very long or not, discovery and inquiry techniques are fashionable now in teaching social studies.

Teacher Orientations and Attitudes

The psychology of personality is linked to inductive teaching in many ways, but one of the most prominent connections is through the ideology of John Dewey. For example, a student of Carl Rogers is quoted by him in _On Becoming a Person_ (1961, p. 306) as saying:

> If we accept Dewey's definition of education as the reconstruction of experience, what better way can a person learn than by bcoming involved with his whole self, his very person, his root drives, emotions, attitudes and values? No series of facts or arguments, no matter how logically or brilliantly arranged, can even faintly compare with that sort of thing.

Dewey was concerned with the whole person, his total personality; and so were the early Gestalt psychologists (Kohler, Koffka, and Wertheimer). They were opposed to elementistic doctrines, and they viewed individuals as unique integrated systems of emotions, perceptions, and cognitions. A key word in their lexicon was "organization," and it is a key word in Allport's definition of personality: "Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment" (1937, p. 48).

Runner's (1959) thinking in formulating a theoretical framework for his approach to measuring personality is similar to that of the Gestalt psychologists. In Gestalt psychology, the way an object is perceived is determined by the total context in which it occurs. Relationships among components of the perceptual field determine how someone or something is perceived rather than the fixed characteristics of the subject. Similarly, in Runner's scheme for "clinically" interpreting scores on his inventories, emphasis is placed upon the interrelationships among orientations rather than upon individual scores and their levels or magnitudes. He puts it this way:

> It seems clear that if personality is to be conceived as a multi-dimensional phenomenon, and if it is assumed that the parts are assumed to bear a dynamic relationship to one another, then the appropriate measurement model should have two principal characteristics: First, the model should make explicit provision for comparison of measures on an intra-individual basis. And second, for the sake of efficiency, these measures should show zero-order correlation to each other for heterogeneous populations" (1959, p. 3)

The emphasis which Runner places upon looking at all of the data obtained in his interview with a subject, in the total context in which the subject lives, is parallel to Lewin's insistence upon understanding the mutually interdependent facts of a psychological field.

The underlying premise for the use of inventories would seem to be the first of Moustakas's (1956) principles for recognizing "the self in true experience and the creation of human understandingness," that is, that the individual knows himself better than anyone else. A second major premise in constructing attitude inventories is that emotional and rational processes are inseparable and therefore estimates of orientations and attitudes are fully as legitimate in predicting human behavior as are estimates of intellectual processes.

Runner's approach to measuring personality is just one of a great many, of course. The use of questionnaires, such as the RSAP inventories, has been sharply criticized. Rating scales and personality inventories have been called the most used and worst forms of human measurement (Weinland, 1948). However, Gage (1963) is not so concerned with the form of the instrument which is used to do the measuring as he is of overlapping and sloppiness of the definitions used. He believes that "the problem is not that there are different conceptions of personality but that researchers fail to distinguish one conception from another, and the data obtained in terms of one definition are not different from the data obtained in terms of another."

Studies of Teacher Orientations and Pupil Achievement

In spite of the inconsistencies employed in defining personality, there are a large number of studies which attempt to show relationships between teacher orientations and the performances of pupils. There are many persons who believe that what pupils learn and how they learn are related directly to the teacher's personality (Taylor and Williams, 1966). Hallman (1967), for example, maintains that authoritarian attitudes and environments inhibit self-directive learning. He defines authoritarian education as "education which directs students to learn what others have already discovered, what others believe, what others have organized." Many teachers, however, are unable to accept Hallman's advice to be less authoritarian and to guide their pupils to discoveries or to allow them to inquire for themselves. They feel very uncomfortable when they try to encourage their pupils to be self-directive. When facts and generalizations can be presented more expeditiously by telling than by indirect means, they can see no reason for not lecturing and requiring certain materials to be intensely studied.

Wodtke's (1963) study provides evidence that the personality of the teacher affects the creative thinking abilities of his pupils. He identified elementary teachers as high controlling or low controlling and then compared the creative thinking test gains of their pupils. The pupils of low controlling teachers achieved higher gains on verbal activity, and the pupils of the high controlling teachers achieved higher gains on nonverbal elaboration. Wodtke found that a high controlling teacher discourages self-initiated pupil talk, verbal creativity, and verbal flexibility. If these findings held true for the study reported here, teachers assigned to the experimental role who were control-oriented would be ineffective in administering the exercises.

Torrance (1965) reported a number of studies in which pupil achievement is related to teacher orientations. Using the Personal-Social Motivations Inventory (which was constructed partly with items from the Runner inventories), Torrance found that in the kindergarten and primary grades a significantly greater proportion of the pupils taught by teachers with creative motivations (which are analogous to the experimental and freedom orientations measured in the present study) made greater gains in their total creative thinking scores than did the pupils of teachers who had stronger motivations to control and to correct. Torrance also found that the pupils of the high motivation teachers made statistically significant gains and the pupils of low motivation teachers had slight losses when they were compared on pre- and post-tests of creative writing.

Tan (1967) also used the Personal-Social Motivations Inventory as one of several instruments for measuring the attitudes, motivations, and classroom performances of student teachers. She found that student teachers who scored high on the Torrance Tests of Creative Thinking had slightly higher mean scores on the Creative Motivations scale of the PSMI. However, on the Critical and the Power Motivation scales, the students scoring high on the creative thinking tests were very similar to those scoring low on the creative thinking tests. None of these findings was statistically significant.

After conducting a study which showed that teachers' overt classroom behaviors are a function of their belief systems, Harvey and his associates (1967) studied 90 teachers in 118 classes in a rural and urban school district and found that the abstractness of teachers' beliefs influences their students. In this study, abstractness was positively correlated with resourcefulness.

Davidson and Lang (1960), in studying the perceptions of 89 boys and 114 girls attending fourth, fifth, and sixth grades in a New York City public school, found that a positive correlation exists between children's perception of their teachers' feelings toward them and children's perception of themselves and that there also exists a positive relationship between favorable perception of teachers' feelings and academic achievement. These findings lend support to the common observation that "warm, supportive" teachers seem to inspire their pupils to achieve more than the pupils of teachers who are indifferent to the feelings of their pupils. Another finding in this study is borne out by the experiences of the investigator: a highly significant relationship existed between desirable classroom behavior and the perception of favorable feelings on the part of the teacher. That is, the children who misbehaved in the classroom perceived their teachers' feelings toward them as negative, and the children who behaved well in the classroom perceived their teachers' feelings toward them as positive.

Discussion

Bruner (1963) has pointed out how powerful an inhibitor of learning and thinking a parent or a teacher can be when he states that either "can instill the fear of being a fool." It can be hypothesized, then, that teachers who are excessively concerned with accuracy or inordinately fond of power may retard their pupils' academic progress. On the other hand, as Shulman and Keislar (1966) remind us, teachers relate to their pupils in highly complex ways and it is very difficult to determine how the personality variables of any teacher affect the intellectual and socio-emotional development of his pupils.

Getzels and Thelen (1960) have developed a theory that when the needs, values, and attitudes of a teacher are known the climate of his classroom can be predicted accurately. Walberg (1968) believes that the needs of the teacher affect the achievement of his pupils. Popham and Baker (1967) report that an attitudinal measure such as their IPPI (Instructional Procedures Preference Inventory) might be of considerable value in identifying teachers who would be predisposed to teach in a particular fashion. Most of these beliefs are unsupported by research evidence, unfortunately.

The belief upon which the present study is based has certainly not been adequately investigated, namely, that "different people find satisfaction in different kinds of jobs, yet we often ask them to assume a task without considering how well their personalities fit the work situation" (Kenyon and Helen Runner, 1954). It may well be that in assigning teachers to new or familiar roles administrators should pay particular attention to the personality patterns of the teachers. Common sense and a great amount of empirical evidence indicate that variables such as "quest for power," "social anxiety," "submissiveness," and others should be considered when a teacher is called upon to engage in team teaching or to use materials and techniques which are innovative to him.

There is a difference, of course, between playing a role and using a mask. As Rogers (1961) points out, when an individual hides his true identity behind a mask, he is usually making himself quite unhappy. He is likely to make those around him unhappy too. The teacher who gets behind a mask is false, and this fact does not go unnoticed by his pupils. Many classroom observers have been perplexed to find a teacher saying and doing all the "right things" and his pupils displaying complete indifference to the teacher and his program. Such a teacher is usually using a mask rather than playing a legitimate teaching role.

A teacher can play a number of roles and utilize many different teaching strategies, but his personality will permeate everything he does. This fact seems to account for the common observation that some "old-fashioned" teachers are much loved and some are scorned. Similarly, strict teachers are both revered and hated. Apparently it is not a matter of whether a teacher is strict or old-fashioned in his methods. His attitudes toward his students, his job, and learning are probably much more important.

CHAPTER III

DESIGN AND MATERIALS

At the inception of the study, the investigator hoped to be able to find relationships between personality variables and teacher effectiveness. Even though the psychological constructs which were to be used and the instruments that have been devised for assessing them have been regularly challenged by behaviorists, the investigator had seen instances which seemed to validate the existence of personality variables whose presence in teaching-learning situations was critical to performance. Therefore, he did not hesitate in utilizing the instrument which he knew best and which seemed to him to be sensitive enough to differentiate people on such important orientations as "quest for power" and "resistance to social pressure."

The vehicle for obtaining data about the relationships of personality variables and teacher effectiveness was the study of two contrasting methods of teaching anthropology to elementary school children described above. In many ways, a methodological study is ideal for obtaining data about the ways in which people react to pressures, directions, and ideas. All of these influences upon behavior, and many others, were present in this study. Since the cooperating classrooms were so widespread, it was impossible for the investigator to observe the teachers and pupils as frequently as he would have liked, and thus much of the significant information about the manner in which the participating teachers coped with the exigencies of their assignments was lost to him. In addition, a study in which teachers purportedly teach in certain modes needs many procedures and guarantees for insuring that the teachers actually teach as they are supposed to teach. This study, like most methodological studies, failed to provide sufficiently such safeguards.

Two general lines of investigation were pursued in
(To determine
this study. To begin with, in order to find out whether an
inductive
alternative approach might be as useful or more useful in
ACP.
teaching the Anthropology Curriculum Project's unit on
culture, two sets of exercises were written for first- and
fourth-grade pupils (Appendix A and Appendix B) and a
teacher's guide (Appendix C) was written to assist teachers
in the experimental group teachers.
in making use of the exercises. A number of people had
Control group used regular presented
wondered, after the introduction of the Anthropology
Curriculum Project's materials into the schools, if a more
inductive method of teaching anthropology might be more
effective than the deductive method advocated in the
materials. Accordingly, the creation of the exercises
and guide was in response to their questions.

At the same time, the investigator wondered if there are identifiable patterns of motivations and attitudes in teachers which tend to cause some to be effective and others to be ineffective in curriculum experiments. He asked himself questions such as these: "Are the teachers who are high on 'performance anxiety' on the Runner Inventory of Attitudes likely to have pupils who will achieve above the average?" and "Is there a particular pattern of motivations and attitudes that enables some teachers to adopt naturally a deductive or expository mode of teaching and another pattern of motivations and attitudes which helps other teachers to adopt easily an inductive or hypothetical mode of teaching?" With regard to the second question, he wondered if "freedom orientation" and "control orientation" would dispose teachers to accept one or the other role readily? Pursuing this line of investigation further, does the teacher who seems ill-suited for either the inductive or the deductive role teach less effectively when asked to use one or the other approach exclusively? Or, conversely, does the teacher who seems well-suited for a deductive or inductive role perform more effectively than other teachers in a study which compares these methodologies?

From these several questions, the following null hypotheses were generated:

1. There is no significant difference in the achievement on tests of knowledge of anthropological terms, facts,

and concepts of pupils whose teachers use deductive materials and methods and pupils whose teachers use inductive materials and methods.

2. There is no significant difference between the achievement on anthropology tests of pupils whose teachers are control-oriented, as determined by the teachers' performances on the Runner Studies of Attitude Patterns, and the pupils of teachers who are freedom-oriented.

3. There are no significant relationships between any of the twelve orientations which can be obtained with the Runner inventory of teachers and the achievement of their pupils on anthropology tests.

4. There is no significant difference between the achievement of pupils of teachers whose orientations appear to be compatible with their assignments and the achievement of pupils of teachers whose orientations appear to be incompatible with their assignments.

The area of the region of rejection of the null hypotheses was determined to be .05.

Supervisors and administrators in Georgia, California, Illinois, Michigan, and Missouri were contacted and agreed to cooperate in testing the above hypotheses. A total of 30 teachers consented to be the experimental and control teachers of the study..

The Instruments

Four instruments for measuring pupil achievement and one instrument for measuring personality variables were employed in this study. The newest forms of the Anthropology Curriculum Project's tests, Composite Form I and Composite Form IV, were used to measure pupil achievement; Composite Form I was administered by the first-grade teachers who cooperated in the study to their pupils as both a pre- and post-test, and the cooperating fourth-grade teachers administered Composite Form IV to their pupils just prior to the initiation of the unit and at its conclusion. In addition, two story-like tests were created by the investigator. Unfortunately, they could not be used in comparing the achievement of the control and experimental classes because the post-tests of these two tests were lost for five of the classes.

The instrument which was used to determine the personal orientations of the cooperating teachers was the Runner Studies of Attitude Patterns, Interview Form III. This is a copyrighted inventory which is published by the Runner Associates.

In order to determine the dominant mode of teaching of the cooperating teachers, a check list of teacher behavior was especially created for this study to be used by the observers who visited classrooms engaged in studying the unit on culture. Finally, a questionnaire was devised which requested that the teachers rank the strategies they used most frequently in teaching the unit.

Runner Studies of Attitude Patterns, Interview Form III

Interview Form III contains a total of 118 questions which are to be answered "yes" or "no." The respondent, in answering any of the questions in the affirmative, is given a point on one of the twelve scales or orientations which the inventory measures. The twelve orientations are "experimental orientation," "emphasis on rules and tradition," "intuitive orientation," "practical planfulness," "desire for power and authority," "passive compliance," "extroversiveness," "hostility and blamefulness," "resistance to social pressure," "social anxiety," "pleasure in tool-implemented hand skills," and "performance anxiety."

Kenyon Runner and his associates have developed a series of inventories to be used in conjunction with other data gathering techniques for the purpose of describing patterns of personality. Their conception of personality is that it is a structure, organization, or whole in which the parts are dynamically related to one another (Runner, 1959). Accordingly, they have developed methods of personality testing which emphasize intra-individual variability and relationships rather than across-individuals correlations. "Pattern analytic interpretations" are preferred by

Runner, and so interpretations of scores by individuals who have been trained in the use of the instrument are necessary. In the case of the present study, interpretations concerning the scores of the teachers with regard to "freedom orientation" and "control orientation" were made by Dr. E. Paul Torrance, an experienced interpreter of Interview Form III.

With 173 academically gifted high school students as his subjects, Guth (1967) investigated the relationships of creativity, drive, and power, using the Minnesota Tests of Creative Thinking (Abbreviated Form VII) and the Runner Schedule of Attitude Patterns (College Form II). He obtained low but significant correlations among the three variables. In a similar study, Torrance and Dauw (1966) administered the RSAP to 155 high school seniors identified as gifted and defined as "high creatives" on the basis of their scores on the MTCT. Orientations obtained with the RSAP were compared with those of 100 unselected job applicants. A far greater proportion of the creative seniors than the members of the comparison group had high experimental orientation, intuitive orientation, and resistance to social pressure. A significant majority of the members of the comparison group had high patterns on rules and tradition orientation, planfulness, and passive compliance. There was also a statistically significant tendency for the unselected subjects to have high scores on hostility.

Another study which related creative thinking to attitude patterns was conducted by Gensemer (1967). He tested 66 student teachers and used the MTCT (Abbreviated Form VII), Hidden Figures Test, Field-Dependency Index, and the RSAP (College Form II). Field-independent student teachers were found to be more resistant to social pressure, less concerned about conventions and rules, more interested in freedom, and more interested in exploring and experimenting.

These investigations by Gensemer, Torrance and Dauw, and Guth indicate that the orientations measured by the Runner inventories are related to thinking abilities or styles of thinking. They do not offer evidence that the Runner inventories are related to overt behavior. However, one piece of evidence is offered in a study done by Woodson (1965) that the Runner inventories may be able to predict overt behavior. She found that Interview Form II was able to differentiate between successful and unsuccessful teachers (as rated by administrators and pupils).

Anthropology Achievement Tests

Composite Form I and Composite Form IV of the Anthropology Curriculum Project's tests were made up of items taken from previously developed tests, by Robert Turknett in February of 1968. The new forms were drawn from the alternate forms (1AR, 1BR, 4AR, and 4BR) which had been used for first and fourth grades so that a single test would be given to each grade level. The original tests (1A, 1B, 4A, and 4B) had been revised by Marilyn J. McCrary under the supervision of Dr. Albert J. Kingston. Considerable variation in the difficulty of the items prompted the preparation of the composite forms.

Using test data from the present study, a reliability coefficient of .61 was obtained on the Composite Form I pre-test for 372 first-grade pupils. The mean number of correct responses was 15.74 (with a standard error of .19), and the standard deviation was 3.72. Skewness was negative (-.26) and significant at the .05 level. The reliability coefficient for 380 pupils on the Composite Form I was .72. The mean number of correct responses was 20.49 (with a standard error of .21), and the standard deviation was 4.17. Neither skewness nor kurtosis was significant.

Higher reliability coefficients were obtained for the pre- and post-tests of the fourth-grade pupils. The coefficient of reliability obtained with data from Composite Form IV for 415 fourth-graders on the pre-test was .78. The mean number of correct responses was 24.76 (with a standard error of .37), and the standard deviation of the scores was 7.52. Skewness was positive and significant at the .05 level, and kurtosis was negative and also statistically significant at the .05 level. The coefficient of reliability for the post-test responses of 405 fourth-grade pupils was .88. The mean number of correct responses was 32.39 (with a standard error of .48), and the standard deviation of the scores was 9.78. Kurtosis was negative and significant at the .05 level. The Kuder-Richardson Formula 20 was employed by the TSSA Program to determine the reliability coefficients. Item analyses indicated that Composite Form I is perhaps too easy a test for first-grade pupils. (See Appendix K.)

All of the Anthropology Curriculum Project tests were constructed with the principal objective of accurately measuring gains in the acquisition of information and understanding of the subject matter in the discipline of anthropology. Rice (1965) has described the philosophy of the project with regard to teaching and evaluating the units in this way:

> The units in anthropology should be useable by teachers and by pupils (teaching rather than resource units), and consist of material pupil-oriented (test, guide). "Useable" as a production criterion implies: with respect to pupil material, contributes to measurable gains in learning in anthropology as measured by pre- and post-achievement tests; with respect to teacher material, permits planning and teaching without the need for special training in anthropology.

Check List of Teacher Behavior

A check list describing possible teaching behaviors or strategies was devised as an aid in determining the dominant teaching mode of the teachers as they interacted with their classes for a period of approximately thirty minutes. Eleven behaviors were presented on the check list, but some observers added other behaviors of their own description to the list as they recorded tallies of instances when the behaviors were observed. In every case, the teacher observed was teaching in her assigned mode.

Questionnaire of Teaching Strategies

Toward the end of the unit, the investigator requested that the cooperating teachers fill out a questionnaire which dealt with the strategies they had engaged in during their conduct of the unit on culture. The teachers were asked to rank, from "1" to "10," the strategies they most frequently employed. The set of rankings which each turned in was considered an indication of whether she had taught inductively or deductively inasmuch as it could be compared to the set of rankings which had been assigned by four judges on a scale from deductive to inductive teaching. Whereas the judges did not agree perfectly (see Appendix H), there was sufficient agreement among them to justify, in the investigator's mind, the correlating of the teacher's rankings with the judges' in order to obtain an index of her style of teaching.

Materials

All of the teachers, both experimental and control, were provided with copies of the regular Anthropology Curriculum Project materials for the unit on culture. It was believed that the first grade pupils in the experimental classes should have the picture booklets that their counterparts in the control classes were to have. Similarly, the fourth-grade pupils in the experimental classes were to have the same materials that the pupils in the fourth-grade control classes usually have when they study culture; and, in addition, they were to have the two booklets of exercises especially created for this study.

First Grade Materials

Two booklets containing pictures and captions, which were produced by the Anthropology Curriculum Project in 1965, were supplied to each of the first-grade pupils in the experiment. The drawings in the booklets illustrate significant features of the culture of the two peoples. The captions under the pictures are intended to be read by the teacher, and they provide much of the subject matter for the unit at the first-grade level. The teacher was supplied with a teacher's guide for the unit (Publication No. 2 of the Anthropology Curriculum Project, March 1965). In addition, she was given a copy of "The Concept of

Culture: Teacher's Background Material for the American, the Arunta, and the Kazak" (Publications 3-5, March 1965).

Fourth Grade Materials

Each of the fourth-grade pupils in the experiment was supplied with a copy of "The Concept of Culture: Pupil Text" (Publication No. 16, 1965) and "The Concept of Culture: Pupil Study Guide" (Publication No. 17, 1965). The former booklet has many definitions of anthropological terms. Its main sections are: "How We Study People," "The Concept of Culture," "Cultural Universals and Cultural Variation," "Enculturation," and "Culture Dynamics." The latter publication deals with the same topics but also includes word lists, suggested activities, "thought questions," and review questions. The pupil is requested to use the study guide in order to master the material in the pupil text. Each of the fourth-grade teachers in the study was supplied with a teacher's guide for the unit (Publication No. 18) and "The Concept of Culture: Teacher's Background Material for Enculturation, Cultural Variation, and Culture Dynamics" (Publications No. 13-15, 1965).

The publications listed above comprise the regular materials which are used by teachers and pupils in first- and fourth-grade classrooms of schools which have been assisted by the Anthropology Curriculum Project in constructing curricula in the discipline.

Teacher's Guide for the Kazak and the Arunta Booklets

The teacher's guide for the two sets of exercises was written to help the experimental teachers better understand the inductive approach that they were requested to adopt in teaching the unit on culture. The following excerpt from the guide expresses the investigator's interpretation of inductive teaching:

"The emphasis in these materials is upon discovery and self-initiated learning. Pupils are encouraged to see relationships among facts, observations, and details and then to make generalizations."

The position taken by the investigator in conceptualizing the role of the experimental teacher was that each individual teacher was the best judge of which exercises might be utilized as she taught the unit on culture. It is impossible for any author to have an adequate knowledge, as he devises curricular materials, of the teaching-learning situations in which the materials will be used. Therefore, the Foreword to the guide contained these remarks:

"We emphasize that these are only suggestions, just as the exercises themselves are only suggestive. The most important point to remember is that, although you as an experimental teacher are expected to teach inductively (or at least to encourage discovery and self-initiated learning), you are to teach in a manner that is congenial to your abilities and beliefs."

It is quite possible that by encouraging the teacher to exercise her judgment in selecting exercises and to teach naturally that she was less likely to follow an inductive pattern of teaching. However, it is clear that inductive teaching is highly individualized teaching and that a teacher who attempts to teach in this mode must be spontaneous and sensitive to the currents of thinking and doing in and out of the classroom. It was hoped that there was enough structure in the lessons themselves that the experimental teachers would not feel too insecure in carrying out their assignments.

Exercise Booklets about the Arunta and Kazak

Thirty-three exercises--16 about the Arunta and 17 about the Kazak--were developed by the investigator to encourage research, independent thinking, and discussion on the part of the pupils in the experimental classrooms. Most of the lessons feature open-ended questions such as these from a lesson about Arunta dwellings:

> "Have you ever built anything similar to the Arunta house?
>
> "If so, what was it?
>
> "What did you like about it?
>
> "What didn't you like about it?
>
> "How long did it last?"

Many of the lessons were designed to involve the pupil in thinking more deeply about a topic, as in the case of this exercise about nets:

"The Arunta's string bag is a type of net. Nets are used in many different ways--as something momentarily to hold a basketball when it goes through a hoop, for catching fish, to hold women's hair, for loading and unloading ships, for catching birds and butterflies, etc. As you can see, many nets are used to trap things. Do you like to trap things? Here are some things that people often try to trap; tell how you would trap each one.

A. heat

B. someone telling a lie

C. ideas

D. happiness"

Believing that inductive teaching emphasizes the pupil's acquiring information and relating it to his own experiences, the investigator made use of a technique that was intended to cause the pupil to inquire about the things in his environment. This is an example of the technique, taken from "Working Together," an exercise in the booklet about the Kazak which was designed to develop the concept of cooperation:

"It should prove to be quite interesting to you to take a survey of the different ways that your classmates cooperate with one another in the classroom and on the playground. Why don't you keep track of all the instances of pupils and adults working together at school? You might also include instances of cooperation at home. Here is a chart you can fill out:

Activity	Location	Could the Activity Be Carried Out Without Cooperation?"

Each of the lessons presented one or more concepts and was accompanied by a reproduction of a drawing which is found in the regular first-grade booklets produced by the Anthropology Curriculum Project. Often an exercise used the illustration as a point of departure. For example, this is the first section of "Comparisons," the fourteenth exercise in the booklet on the Arunta:

"Turn to the next page and examine the illustration of the four Arunta men getting ready for a totem ceremony. Does this scene remind you of anything you have seen before? If so, what does it remind you of?"

Unfortunately, the reproductions of the drawings were inferior in quality, but the investigator felt that they were sufficiently faithful to the originals and that the pupils might be prompted to find other drawings and photographs in magazines such as the National Geographic and also in encyclopedias.

Without doubt, the exercises were different from those that most of the pupils were accustomed to, and so in classrooms where the teacher was unfamiliar with this type of material there may have been some frustration and confusion. The investigator's inability to counsel the experimental teachers and to demonstrate how the exercises might be administered in the classroom unquestionably reduced the effectiveness of these materials.

Subjects

The subjects of this experiment were 30 elementary school teachers in seven school districts in California, Georgia, Illinois, Michigan, and Missouri. Fourteen of the teachers taught the unit on culture at the fourth-grade level and 16 teachers taught it at the first-grade level. Two school districts participated in the study from the states of Georgia and California, and one school district participated in each of the remaining states.

Of the two school districts in California, one was located in a suburban area. The children came from homes that can be described as belonging to people from professional and working classes. The two first-grade teachers taught a total of 48 pupils who were measured on both pre- and post-tests, and the two fourth-grade teachers taught 53 pupils who were tested. The other school district, located within a few miles, was actually a private school. Most of the children attending the school came from professional families. The two first-grade classes of this school had a total of 31 pupils who were tested; the two fourth-grade classes enrolled 34 pupils who took the tests.

Two schools were utilized in one school district of Georgia for the study. One was designated as the control school and the other the experimental school. These schools were located within seven miles of one another in a rural area. A total of 29 pupils were tested in the classes of the first-grade control teachers; 56 pupils were tested in the two classes of the fourth-grade control teacher. The teachers of the first-grade experimental classes taught a total of 52 pupils, and their counterparts in the fourth grades taught 52 pupils who were tested. The two schools drew from homes that were predominantly working class. The other cooperating school district of Georgia was located about 150 miles from the first school district and was located in a considerably larger community. Its pupils came from lower middle class and upper lower class homes. A total of 152 fourth-grade pupils were given the pre- and post-tests in this district.

There was a control school and an experimental school in Illinois. In the experimental school a total of 33 pupils were tested in the first grade and 50 pupils were tested in the fourth grade. Thirty-three first-grade pupils were tested in the control school. The district was located in a suburb of a large city. Most of the children came from middle class and upper middle class homes.

The school district in Michigan was located near a large university. Most of the children in the district came from middle class families. Twenty-one first-grade children were tested in the experimental school and 22 were tested in the control school. The pre- and post-tests were given to 26 of the fourth-graders in the experimental school and to 25 in the control school.

The school district in Missouri was located in a suburban community which contained a number of manufacturing plants. The pupils who attend the eight elementary schools of the community come from middle class and lower middle class homes. Fifty-nine first-grade pupils were tested in the control classes, and 34 were tested in the experimental classes. Twenty-six fourth-grade pupils were tested in the control class, and 28 were tested in the experimental class.

A total of 864 pupils in first- and fourth-grade classrooms were given the pre- and post-tests.

Procedures

First- and fourth-grade teachers in Ila, Danielsville, and Cartersville in Georgia were contacted about their possible cooperation in a study which would compare an inductive approach to teaching the unit on culture with the approach contained in the materials published by the Anthropology Curriculum Project. Five fourth-grade teachers and four first-grade teachers agreed to take part in the study. Because it seemed desirable to have teachers from other sections of the United States participate, supervisors and administrators in California, Illinois, Michigan, and Missouri were also contacted. As a consequence, two school districts in California and one each in Illinois, Michigan, and Missouri accepted the invitation to cooperate in comparing the two approaches to teaching a unit on culture in the first and fourth grades.

Pupil booklets for studying the Arunta (Appendix A) and the Kazak (Appendix B), a teacher's guide for using the two booklets, and the regular Anthropology Curriculum Project materials for the unit on culture were sent to the cooperating schools. The unit was scheduled to be taught in a period of five weeks, beginning in the last week of March. However, because of scheduling problems and unforeseen interruptions, several of the schools did not begin instruction until much later. A pre-test was administered prior to the introduction of the unit, and a post-test was given at the conclusion of the unit. Again, interruptions in many cases caused delays, and not all of the post-tests were given a day or so after the unit was concluded, as stipulated in the directions to the cooperating teachers. This lack of uniformity undoubtedly is reflected in many of the mean gains and mean post-test scores.

It was hoped that the investigator could visit each school in which the study was taking place, either prior to the initiation of the unit or during the period of time in which the materials were being used. The purpose of such a visit would have been to clarify the purposes and procedures of the study and to explain how the two approaches to the unit might differ. However, a lack of time in which to travel to the widely separated schools prevented his making the visitations. Instead, as often happens in studies of this kind, contacts were maintained between the investigator and the supervisors and administrators via the mails and telephone, and the majority of the procedural problems that arose were solved in this manner. Unfortunately, there were no communications between the investigator and the out-of-state teachers during the period when the unit was being taught. On the other hand, the teachers in Georgia, particularly in Madison County, were able to ask questions and offer comments regularly inasmuch as the investigator visited their schools at least twice a week for eight or nine weeks.

An orientation session was held with the experimental teachers at Danielsville Elementary School prior to their initiating the unit. At this meeting, the teachers and the investigator exchanged views on teaching techniques and instructional materials, and the teachers attempted to determine what was expected of them during the course of the study. It was believed that these four teachers might conduct their anthropology lessons somewhat differently than the out-of-state experimental teachers as a consequence of the orientation session. Important to the purpose of the study were the attitudes that developed in these teachers and in the teachers who had no direct contact with the investigator or other personnel of the Anthropology Curriculum Project.

Methods of Data Analysis

A computer program, BMDO2R Stepwise Regression (Dixon, 1965), was employed to obtain intercorrelations between gains, pre-test scores, post-test scores, orientations on the Runner Inventory, and two constellations of orientations (freedom orientation and control orientation). In addition, in order to secure reliability data on the composite forms of the Anthropology Curriculum Project, the Test Scorer and Statistical Analysis Program 2 (Wolf and Klopler, 1963) was utilized. Other methods of data analysis were accomplished by means which do not make use of computerized techniques and will be described as results are presented in Chapter IV.

CHAPTER IV

RESULTS AND DISCUSSION

In order to determine whether an alternate approach to that taken by the Anthropology Curriculum Project of the University of Georgia in teaching a unit on culture to first- and fourth-grade pupils might be worthy of consideration, two sets of exercises concerning the Arunta and Kazak were written. These materials were designed to accompany the regular pupil texts and study guides, and their purpose was to encourage pupils to acquire information on their own and then to organize the information so as to be able to incorporate what they have learned into their own conceptual frameworks.

Unlike some procedures for imparting knowledge of facts and concepts, the new exercises featured open-ended sentences. This approach is not the same as that in which the teacher withholds the answer until one or more pupils "discover" it. The investigator, in contrast with some theorists, considers the withholding of an answer one kind of deductive teaching. It can be done in a spirit of inquiry, as in Conray's "What's in the Box" game (Torrance and Myers, 1962); however, in most cases withholding an answer is a form of drill. Since the teacher, in many cases, learns along with his pupils in teaching the anthropology units (the teachers who have ordinarily taught the unit concerning culture with the Project's materials have had little or no formal instruction in the discipline of anthropoloty), the open-ended or divergent thinking type of question seemed especially appropriate for this study.

It can be seen quite readily that an approach such as the one just outlined entails a different kind of planning on the part of the teacher. The experience of many experts is that teachers who endeavor to teach in the inductive mode need skills that are not necessary when they teach deductively. The teacher's guide which accompanied the exercises was written in an effort to provide some clues as to how the exercises might be administered, but it could not provide the teachers with the requisite skills.

The approach of the exercises, then, differed from that represented by the Anthropology Curriculum Project's materials, which are deliberately deductive in mode (Jarvis, 1967). It might be assumed that if these exercises were used by the experimental teachers as the principal springboards for investigating the Kazak, Arunta, and American cultures, their teaching would differ in kind from that of the control teachers.

As noted above, every teacher interacts in a unique way with his pupils. That is, no two teqchers have identical patterns of behaving when they are interacting with the pupils. This is not to say that there are no similarities in the styles or approaches that teachers adopt in their dealings with their pupils. Because of the influences of college professors, professional publications, and administrators, teachers tend to approach their instructional objectives in common ways. They are also somewhat insecure as a group; and so, in their eagerness to be doing the correct thing and thus to gain approval, they adopt fashionable techniques.

In order to have some indication of the manner in which the unit was being taught by the various teachers, a curriculum specialist in each of the out-of-state districts and the investigator visited each of the classrooms. A checklist (Appendix F) was used by the observers to record the behaviors of the teachers during a thirty-minute period in which they were engaged in teaching the unit about culture. The checklists were analyzed in order to determine whether the behaviors of the teachers were consonant with their assigned roles. In nearly every case, the teacher, when observed, was teaching as she* was expected to be teaching. Inasmuch as the observers reported that the teachers were teaching in their assigned modes during the period of observation, it may be assumed that the teachers understood many of the behaviors that are associated with these roles. However, since the teachers were aware of the observer (and usually forewarned of his visit) and were also aware of the manner in which they were being asked to teach the unit, the reports of the observers cannot be considered as indicative of the manner in which the unit was taught over the five weeks period.

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*Since there was only one male teacher among those involved in this study, the feminine gender will be used in referring to the teachers.

In order to obtain some corroborating evidence with regard to the modes which actually characterized their teaching, the teachers were asked to fill out a report in which they were to rank the strategies which they employed most frequently (Appendix G). The strategies were ranked independently by four individuals who have been concerned with the problems of teaching social studies inductively and deductively: a Co-Director of the Anthropology Curriculum Project, a professor who teaches a course in the methods of social studies instruction, a professor of the philosophy of education, and the Sociologist-in-Chief of the Sociological Resources for Secondary Schools (a division of the American Sociological Association). The judges ranked the ten strategies on a continuum from deductive to inductive, a score of "10" being assigned to the most inductive and a score of "1" being assigned to the most deductive strategy. Their combined rankings were made into a composite set of rankings (see Appendix H), and this set was compared with the reports of the teachers.

Table 1 shows that, of the 26 teachers who responded to the questionnaire, five (19 percent) reported that they had taught more in the inductive mode than in the deductive mode. It will be noted that all of the control teachers reported that they had taught in the deductive mode. On the other hand, six of the experimental teachers reported teaching more deductively than the "least deductive" of the control teachers. The mean correlation of the experimental teachers was .12, indicating that as a group they taught somewhat more deductively than inductively. If the gains (in standard scores) made by the classes of the five "most deductive" control teachers and the five "most inductive" experimental teachers are compared, the classes of the control teachers average gains of 55.7 and the classes of the experimental teachers average only 41.9. The difference between the two means is significant at the .05 level. The disparity is much greater than when all of the control classes are compared with all of the experimental classes, and so it can be assumed that teaching deductively contributed to the achievement of pupils on the Anthropology Curriculum Project tests and that teaching inductively was considerably less effective in raising the pupils' scores. Inasmuch as over 90 percent of the fourth-grade test contains items which ask the pupil to recall facts and terms and over

TABLE 1

Agreement between Reports of Strategies by Teachers and Deductive Teaching

Experimental Teacher	Coefficient of Correlation	Control Teacher	Coefficient of Correlation
1201	.53	1210	.82
1202	.18	1220	.43
1203	-.54	1230	.45
1204	-.13	2310	.59
2301	.54	2320	.68
2302	-.58	2410	.51
2401	.21	2420	.28
2402	.46	3110	.55
3101	.54	4110	.80
3102	.47	4120	.86
3103	-.31	5110	.37
4101	-.59		
4102	.15		
5101	.68		
5102	.24		
N = 15	Mean = .12	N = 11	Mean = .58

95 percent of the first-grade test contains recall items, it might be said that the two tests are efficient instruments for measuring deductive teaching.

The finding that the majority of all the participating teachers taught more in the deductive mode than in the inductive mode was anticipated since the investigator is convinced that most teachers rely more upon strategies of telling and showing than of encouraging discoveries. It can be assumed that the basic style of teaching of many of the experimental teachers was not altered appreciably by the exercises and the accompanying teacher's guide. Furthermore, as Wilson (1968) and many others have pointed out, one rarely finds a teacher who teaches exclusively in one mode. Indeed, the criterion of effective teaching used by some investigators is flexibility of style. Joyce and Hartoonunian (1967, p. 94) assert that "... the potentially better teacher is one who is able to plan and control his professional behavior--to teach many kinds of lessons, to reach many diverse learners, to create different social climates, and to adapt a wide range of teaching strategies to constantly changing conditions."

Tests of Hypotheses

Hypothesis One

Notwithstanding the evidence that several of the experimental teachers did not fulfill their inductive role, a comparison was made of the gains of the post-test scores over the pre-test scores by the pupils of the two groups of teachers. It was possible to juxtapose control and experimental teachers in pairs because they were matched by grade level and their classes were considered equivalent with regard to socio-economic factors and ability.* The Wilcoxon Signed-Ranks Test for matched pairs was used to determine if the two groups of teachers differed significantly (at the .05 level of confidence) when the average gains of their pupils were converted to standard scores. Table 2 indicates that ten of the control teachers excelled their matchmates and that eight of the experimental teachers surpassed their matchmates. The Wilcoxon Test provides a value which is not significant at the .05 level of confidence, and so it may be said that the null hypothesis is confirmed by this test. Similar results are obtained when the post-test scores of experimental teachers and control teachers were subjected to the Wilcoxon Test.

In order to obtain an additional measure of a possible difference between the experimental and control teachers, a t-test of correlated samples (Gourevitch, 1965) was used to compare the raw-score gains of their classes. Since Composite Form I and Composite Form IV are not equivalent

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*If there were only two teachers at a grade level in a school district--one experimental and one control--then these two were compared.

TABLE 2

Comparison of Mean Gains in Standard Scores of Post-Tests over Pre-Tests by the Classes

Pair	Gain of Control Class	Gain of Experimental Class	Difference	Rank of Difference	Rank of Less Frequent Sign
1	78.0	44.2	-33.8	-18	
2	78.0	61.0	-17.0	-15	
3	62.2	44.2	-18.0	-16	
4	62.2	61.0	- 1.2	- 2	
5	39.8	42.9	3.1	4	4
6	39.8	35.8	- 4.0	- 5.5	
7	36.9	46.1	9.2	10.5	10.5
8	63.6	30.5	-33.1	-17	
9	53.3	57.3	4.0	5.5	5.5
10	43.4	57.0	13.6	14	14
11	41.7	42.3	0.6	1	1
12	41.7	50.1	8.4	9	9
13	47.9	42.3	- 5.6	- 7	
14	47.9	50.1	2.2	3	3
15	54.9	41.6	-13.3	-13	
16	53.6	44.3	- 9.3	-12	
17	65.9	56.7	- 9.2	-10.5	
18	42.6	49.8	7.2	8	8

T = 55

P = .095

(Form IV has twice as many items as Form I), a test was run for each grade level. The results of the tests, as shown in Tables 3 and 4, reveal no significant differences between the classes of the control and experimental teachers at either grade level. Other statistical tests such as the Mann-Whitney Test were run; and, again, the differences between the classes of the two groups of teachers proved to be statistically non-significant.

There are many possible reasons why the experimental and control classes performed in a similar manner on the anthropology achievement tests. First, as suggested above, the manner in which the unit on culture was taught in the control classes was probably not radically different from that of the experimental classes. If the experimental pupils conscientiously accepted the challenges of the exercises, they probably would have been engaged in different learning and thinking activities from the control pupils. However, several experimental teachers indicated that the exercises were not featured prominently in their conduct of the unit.

In order to insure a marked difference in the approaches of the two groups of teachers, it would have been necessary to visit all of the classes frequently. Unfortunately, this was not possible because of time and distance factors. Although four of the experimental teachers in Georgia participated in an in-service meeting prior to the beginning of the experiment and consulted rather often with

TABLE 3

Comparison of Mean Gains of Post-Tests over Pre-Tests by the Classes of Experimental and Control Teachers at the First-Grade Level

Pair	Control Class	Experimental Class	Difference	D^2
1	10.60	4.35	4.25	18.0625
2	10.60	7.46	3.14	9.8596
3	7.67	4.35	3.32	11.0224
4	7.67	7.46	.21	.0441
7	3.00	4.69	-1.69	2.8561
10	6.73	4.19	2.54	6.4516
11	3.88	4.00	- .12	.0144
12	3.88	5.44	-1.56	2.4336
13	4.88	4.00	.88	.7744
14	4.88	5.44	- .56	.3136
16	6.08	4.36	1.72	2.9584
18	4.05	5.38	-1.33	1.7689
			10.80	

$t = 1.51$, $.20 > P > .10$

TABLE 4

Comparison of Mean Gains of Post-Tests over Pre-Tests
by the Classes of Experimental and Control
Teachers at the Fourth-Grade Level

Pair	Control Class	Experimental Class	Difference	D^2
5	5.20	6.08	- .88	.7744
6	5.20	4.04	1.16	1.3456
8	12.06	2.50	9.56	91.3936
9	9.08	10.23	-1.15	1.3225
15	9.54	5.71	3.83	14.6689
17	12.71	10.07	2.64	6.9696
			15.16	

t = 1.565, .20 P .10

the investigator throughout the period of time allotted to the teaching of the unit, two of the teachers reported in their strategies questionnaire that their teaching was essentially deductive. Therefore, although closer supervision could have improved the study immeasurably, the design of the study did not guarantee that control teachers would teach exclusively in a deductive manner nor that experimental teachers would teach only in an inductive manner. Individual teachers were permitted to select the lessons and the materials they felt would help their pupils acquire the facts and concepts of the unit, and so it is unlikely that more in-service meetings and observations would have caused the teachers to remain within their assigned roles.

In all probability, strict supervision is not justified in situations in which teachers are expected to use their judgment regarding the selection of activities and materials. When, as was the case in this study, control and experimental teachers are not asked to follow a script, there is every reason to expect that there will be a good deal of overlapping of strategies between the two groups. The price for requiring teachers to follow a precise script is their spontaneity and sensitivity. It would seem that, of all the subject matter areas of the curriculum, social studies instruction would suffer most from such a provision.

A second major reason why there were no significant differences between the experimental and control classes with regard to achievement on the Anthropology Curriculum Project tests is that the activities suggested in the experimental exercises may have been similar or identical to some of the activities which are found in the regular Project materials that were furnished to the control teachers. For example, a few of the questions that are offered for the teacher's use in the Teacher's Guide for Grade One (Publication No. 2, 1965), are similar to questions that appear in the experimental exercises:

> "Is there any relationship between house type and the type of economy prevailing in a culture? Explain."
>
> "Can culture influence housing type? Explain."
>
> "How can the physical environment influence housing type?"

These questions cause the pupil to see relationships among facts that he has learned and to generalize about sets of relationships that appear to have something in common. This technique was also employed in the experimental exercises. For example, in an exercise dealing with the dwellings of the Kazak, the pupil is asked these questions:

> "From just looking at the picture of the yurt, would you say that it is a summer home or a winter home?
>
> "Why do you think so?
>
> "What do you think the roof of the yurt is made of?
>
> "Would this be any kind of indication as to the way the Kazak live?"

Although the Anthropology Curriculum Project materials stress the recall of definitions and facts, they quite naturally contain some suggestions which encourage the pupil to organize his information and to draw inferences. It is likely that in some respects the two sets of materials advocate similar techniques of instruction, then.

A fundamental reason for the absence of important differences between the two groups of classes might be found in the instruments which were used to measure pupil growth. It was recognized at the time that the study was conceived that it would be extremely important to be able to measure the growth of intellectual skills and abilities as well as the acquisition of knowledge. Accordingly, the investigator attempted to devise two tests that would assess growth in the abilities which are called application, analysis, and synthesis by Bloom and Krathwohl (1956). These tests were administered at the beginning and the end of the unit by the control and experimental teachers, along with composite tests which had been recently constructed by Robert Turknett from previously used forms that had been used to assess achievement concerning the study of culture. As a result of the loss of the post-tests of four of the classes, the two additional tests could not be used to measure growth of knowledge, understandings, and skills. The findings obtained by the tests that were available for analysis, however, showed that the new tests were poorly constructed and probably of little use in assessing the skills and abilities they were designed to measure.

An analysis of the items of Composite Form I and Composite Form IV revealed that only one of the thirty items of Composite Form I was not concerned with recalling information and that but five of the sixty items of Composite Form IV did not deal with recalling information. The great bulk of the items on both tests was concerned with knowledge of terms and knowledge of specific facts. It might be supposed that the teacher who drilled her pupils on the retention of facts and the reproduction or recognition of terms would assist them in raising their scores on the post-tests. In contrast, the teacher who strove to have her pupils process information in order to make fruitful generalizations would probably not be doing a particularly good job in preparing them for the post-test to come. In the light of this analysis of the test items, the edge of the control teachers over the experimental teachers (ten control teachers excelled their matchmates and eight experimental teachers surpassed their matchmates) could have been anticipated. The appropriateness and sensitivity of the instruments used in comparing methodologies is of obviously great importance.

Although the teachers who participated in the study were to have commenced the unit during the last week of March and concluded it five weeks later, after twenty-three lessons had been taught, there was a great deal of variation among teachers with regard to scheduling the unit. Many teachers complained that there was not enough time to do an adequate job of teaching the unit on culture, and because no exact prescriptions concerning the length of time to be devoted to the typical lesson were dictated to the teachers it can be assumed that the actual amount of time that pupils were engaged in the study of culture varied widely from class to class. A fourth reason, then, for the inconclusive results can be found in the lack of uniformity regarding the scheduling of the lessons. It might be noted also that an inductive approach typically requires more time on the part of the pupils than does a deductive approach. If the interruptions and delays hindered either of the two groups of teachers, it was more likely to have hindered the experimental teachers.

Finally, the personal orientations of the teachers may have been responsible, in part, for the indecisive findings. It would appear from a wealth of empirical data that has been gathered by supervisors, principals, clinical professors, and the like that there are personality traits that make participation in an experiment of this kind difficult for many teachers. There are also orientations and motivations that make participation in a methodological study relatively easy. Some teachers resist change of routine and materials; others seem to almost welcome changes.

However, it can be assumed that nearly all of the teachers in this study took part willingly; and so inflexibility did not appear to be a trait that operated to prevent the participants from carrying out their teaching assignments. In support of this observation, a majority of the teachers scored above average in "experimental orientation" on the Runner Studies of Attitude Patterns (RSAP).

On the other hand, as in any situation where a teacher is assigned a role, some of the teachers seemed to be well-suited to teach inductively and some did not. Similarly, there were teachers who were required to teach deductively who, judging from their Runner scores, were ill-fitted and others who were admirably equipped for their role. The result was to confound the possible differences between the two methods of teaching the unit. Ideally, teachers who were freedom-oriented would have been assigned to the inductive role and teachers who were control-oriented would have been assigned to the deductive role. However, as Strom and Galloway (1967, p. 287) maintain, "any concept of a method of teaching must encompass the notion that method is a function of behavior; and that teacher behavior permeates every strategy the teacher employs regardless of subject matter or grade level." The question of whether the teacher's assets, both professional and personal, override--or make irrelevant--his role will always be a matter of concern when methods and materials are compared.

Another way of testing the null hypothesis that there would be no difference between teachers whose roles were compatible with their personal orientations and those whose roles were incompatible with their personal orientations is to compare the six pairs of teachers who taught the unit in the same mode and at the same grade level. This method of analyzing the data removes such important variables as the mode of teaching and the bias of the tests for one or the other mode, and it provides a logical means of finding out whether the compatibility of the teacher's orientations with her role is a factor in the achievement of her pupils on the post-test. If the orientation scores of these teachers are examined, it can be seen by inspecting Table 5 that one of the matchmates appears to be better suited to her role than the other in five of the six cases. The pair of 1240 and 1250 are nearly identical with regard to role compatibility, and so it is difficult to say which was better suited to the role of control teacher. By examining the gains for each pair of teachers, one can see that the pupils of the "more compatible" teacher had greater gains of achievement than the pupils of the "less compatible" teachers in four instances. In the case of teachers 1240 and 1250, the gains made by their pupils were extremely close, as one might expect from their role compatibility scores. Thus, the compatibility of the teacher's orientations with her assigned role appears to be a predictor of

TABLE 5

Comparison of the Freedom and Control Orientation Scores with Class Gains for Teachers Matched According to Role and Grade Level

Teacher	Role	Freedom Orientation	Control Orientation	Class Gain
1210	Deductive	13	18	10.60
1220	Deductive	13	0	7.67
1240	Deductive	25	18	8.78
1250	Deductive	26	20	8.55
1202	Inductive	18	16	7.46
1201	Inductive	20	22	.35
1204	Inductive	19	19	4.04
1203	Inductive	18	16	6.08
3102	Inductive	23	21	4.00
3101	Inductive	25	14	5.44
3110	Deductive	19	18	3.88
3120	Deductive	16	7	4.88

pupil achievement in five of the six cases of pairs whose roles were the same.

Hypothesis Two

The second null hypothesis--that there is no significant difference between the achievement of pupils whose teachers are control-oriented and pupils whose teachers are freedom-oriented--appears to be confirmed by the data given in Table 6. Coefficients of correlation between control orientation (Ru, Pl, Hl, and Pc combined) and gains and post-test scores are -.04 and .22 respectively. Coefficients of correlation between freedom orientation (Eo, Io, Re, and T combined) and gains and post-test scores are -.23 and .12 respectively. Although the correlations are not statistically significant, it can be seen by examining Table 6 that control-oriented teachers had pupils who performed somewhat better on the Anthropology Curriculum Project tests than did the pupils of freedom-oriented teachers.

On the other hand, if teachers are matched wherever possible according to their mode of teaching (control teachers are matched with other controls and experimental teachers are matched with other experimentals), along with other pairings of teachers at the same grade level in a school district, 82 percent of the teachers with the stronger freedom orientation have pupils who gained more from pre- to post-test. This finding does not really contradict the

TABLE 6

Zero-Order Intercorrelations between Personality Variables, Gains, Pre-Test and Post-Test Scores

	Sa	T	Pa	FO	CO	Gain	Pre-Test	Post-Test
Eo	0.374	0.332	0.414	0.787	-0.133	-0.215	0.202	0.119
Ru.	0.389	0.083	0.193	-0.145	0.595	0.124	-0.076	-0.035
Io	0.113	0.121	0.373	0.736	0.179	-0.040	0.133	0.106
Pl	-0.004	0.296	0.214	0.015	0.724	-0.167	0.168	0.108
Pw	-0.209	0.259	-0.266	0.340	-0.103	-0.159	0.141	0.079
Pc	0.314	0.158	0.572	0.420	0.687	-0.052	0.392	0.384
X	-0.032	0.114	-0.084	0.015	0.166	-0.033	0.096	0.093
Hl	0.391	0.176	0.473	0.144	0.676	-0.121	0.088	0.039
Re	0.027	-0.026	0.326	0.500	0.122	0.343	-0.058	0.050
Sa	1.000	0.227	0.658	0.297	0.346	0.003	0.124	0.109
T		1.000	0.288	0.538	0.214	-0.650	0.266	0.015
Pa			1.000	0.542	0.451	-0.057	0.389	0.345
Fo				1.000	0.134	-0.228	0.218	0.117
Co					1.000	-0.039	0.227	0.216
Gain						1.000	-0.069	0.273
Pre-Test							1.000	0.937
Post-Test								1.000

Symbols:
Eo = Experimental Orientation
Ru = Rules Orientation
Io = Intuitive Orientation
Pl = Planfulness
Pw = Power Orientation
Pc = Passive Compliance
X = Extraversion
Hl = Hostility
Re = Resistance to Social Pressure
Sa = Social Anxiety
T = Pleasure in Use of Tools
Pa = Performance Anxiety
Gain = Post-Test Score minus Pre-Test Score in Standard Score
Pre-Test = Pre-Test on Composite Anthropological Test
Post-Test = Post-Test on Composite Anthropological Test

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TABLE 6 (Continued)

	Eo	Ru	Io	Pl	Pw	Pc	X	Hl	Re
Eo	1.000	-0.333	0.435	-0.270	0.111	0.326	-0.155	-0.102	0.176
Ru		1.000	-0.027	0.285	-0.222	0.107	0.067	0.344	-0.060
Io			1.000	0.010	0.358	0.413	-0.003	0.088	0.263
Pl				1.000	0.003	0.470	0.345	0.439	0.070
Pw					1.000	-0.038	0.297	-0.002	0.155
Pc						1.000	0.005	0.270	0.154
X							1.000	0.197	0.132
Hl								1.000	0.275
Re									1.000

one just cited because when teachers are compared in this way only relative differences between them are noted. The coefficients of correlation reveal the magnitudes of the relationships on some dimension, not the differences between pairs of teachers.

Freedom Orientation

The intercorrelations obtained from this matrix seem to lend some support to the Runners' rationale (based on factor analytic studies) for grouping together "experimental orientation," "intuitive orientation," "resistance to social pressure," and "pleasure in the use of tools" as a "freedom orientation":

Eo - Io = .435

Eo - Re = .176

Eo - T = .332

Io - Re = .263

Io - T = .121

Re - T = -.026

The slightly negative correlation between "resistance to social pressure" and "pleasure in the use of tools" is of special interest inasmuch as these two were the best predictors of both gains and post-test achievement of the twelve orientations.

Control Orientation

The data provide somewhat better support for the "control orientation" rationale. Two of the highest intercorrelations obtained are found here. Apparently, "rules orientation," "hostility," "passive compliance," and "planfulness" were correlated in the teachers who participated in this study:

Ru - Pl = .285
Ru - Hl = .344
Ru - Pc = .107
Pl - Hl = .439
Pl - Pc = .470
Hl - Pc = .270

Hypothesis Three

The third null hypothesis incorporates a group of sub-hypotheses concerning the lack of relationship between teacher orientations and pupil achievement on the Anthropology Curriculum Project tests. The investigator was quite interested in trying to determine if there might be any orientations of the teachers, as revealed by the Runner inventory, which would predict pupil achievement in this study. Two of the orientations were found to be significantly related to gains. The coefficient of correlation of "pleasure in the use of tools" and gains was -.65 (significant at better than the .005 level of confidence). "Resistance to social pressure" was correlated with gains at .34 (significant at the .05 level). These findings can be noted in Table 6. They were also brought out in the

Stepwise Regression sequence of multiple linear regression equations as the two variables which made the greatest reduction in the error sum of squares.

Somewhat different findings are obtained when the correlations of the orientations and the post-test scores are analyzed. "Passive compliance" and post-test scores were correlated at .38 (significant at the .025 level of confidence), and "performance anxiety" was correlated with post-test scores at about .35 (significant at the .05 level). Virtually no relationship was found between "pleasure in the use of tools" and post-test scores, and there was almost as little relationship between "resistance to social pressure" and post-test scores.

Interestingly enough, most of the orientations were negatively correlated with gains. However, the majority of these correlations are very slight and can be translated as "no relationship."

Hypothesis Four

The final null hypothesis states that there is no significant difference between the achievement of pupils whose teachers received assignments which were compatible with their orientations and pupils whose teachers received assignments which were incompatible with their orientations. When the gains (converted to standard scores) of the classes of teachers with compatible assignments (that is, control-oriented teachers who were assigned deductive roles and freedom-oriented teachers who were assigned inductive roles) and the gains of the classes of teachers with incompatible assignments are compared, there is almost no difference in the mean scores of the two groups (51.5 for the classes with "incompatible" teachers and 48.5 for the classes of "compatible" teachers). However, averaging the scores of the classes is probably a poor way to detect differences in the performances of the various groups of pupils. When the scores of these widely differing classes of children--with all of their varying abilities and backgrounds--are averaged, not too much can be said about the single figure that represents what passes as an index of achievement.

Discussion

Teachers employ many techniques to achieve their purposes. Some are deliberately employed, and others are used unconsciously. In order that a teacher adhere to a particular style of teaching, he must be continually aware of his own behavior and of the actions and progress of his pupils, and he must be able to make his behavior conform to a clearly understood model. These requirements were not realized in the study which has been reported. On the contrary, the findings of the study support the contention of many writers that teachers naturally utilize a variety of teaching strategies. It is probably unwise to force a teacher into one sharply defined style because different pupils, in an infinitude of situations, require divergent approaches by their teachers.

Perhaps, as Kersh (1958, 1962) has suggested, treatment or mode of teaching is not as crucial to pupil achievement as the amount of motivation and practice experienced by pupils. In reflecting upon the findings of this study with regard to the inductive versus deductive controversy, teacher orientations and motivations and pupil motivations and practice might have been operating more effectively than modes of teaching as dependent variables. The compatibility of his assignment with his personal orientations is unquestionably a factor in the success of any teacher, whether he is teaching high school French in an inner-city school or the alphabet to suburban five-year olds. A great deal more should be known about how the motivations and orientations of teachers affect achievement and the acquisition of skills and attitudes. The continued use of the Runner inventory and other similar instruments to determine the way teachers perceive themselves and others is needed so that we can predict more accurately the situations in which they can perform optimally in the service of their students.

Even though many powerful variables were not controlled in this study, there can be found in the results a number of interesting relationships. That teachers who take pleasure in using tools should have pupils who did not achieve well on the anthropology tests is a puzzling finding. It might be interpreted in many ways, but the investigator will only speculate that, if the attitudes and values of teachers influence their pupils (especially with regard to remembering information), then the teachers of this study who enjoy using tools probably were the kind who encourage their pupils to engage in activities which do not contribute to recalling facts and definitions. The finding that teachers who resist social pressure had pupils who improved their scores considerably on the anthropology tests is difficult to interpret because it is hard to know what this independence of mind meant in the various teaching situations of this study. In some cases, an independent spirit in a teacher might have meant that the teacher would not be concerned about what the other teachers were anxious about, and thus was able to concentrate on matters more central to the achievement of her pupils. There is, in fact, some support for this conjecture in that the pupils of the freedom-oriented teachers surpassed the pupils of matched control-oriented teachers in gains, and "resistance to social pressure" is a component of freedom orientation.

One of the most significant of the findings, from a statistical standpoint, was that teachers whose performance on the Runner inventory indicated that they were passively compliant had pupils who did quite well on the post-test. On the surface, this finding seems to contradict the relationship just mentioned--if teachers who resist social pressure have pupils who improve their scores more than the pupils of other teachers, how can teachers who comply passively also have pupils who achieve at a high level? Perhaps the paradox can be explained by conjecturing that most of the teachers who resist social pressure did not also resist administrative pressure. If the two orientations can thus be distinguished, there is no contradiction in the findings.

It goes without saying that this study only hints about some of the powerful human forces which operate to make some educational programs successful and others miserable failures. Many more studies which link teacher personality with experimentation in methods and materials must be undertaken before a good beginning will have been made in this important area of research.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The principal theme of this study was the influence of personality variables upon the behavior of first- and fourth-grade teachers when they were asked to teach in prescribed ways. Aside from the evidence provided by an observation by a curriculum specialist and a self-report of their teaching strategies, the nature of their teaching could only be inferred by the performances of their pupils on two tests of knowledge about culture. Basing one's judgments of teachers' behavior upon the test scores of their pupils is a common, if questionable, practice. Since pupil achievement is considered a primary criterion of teacher effectiveness, however, using the test scores of the 30 teachers who took part in this study might be considered justifiable.

One of the major findings of the study was that there were no significant differences in achievement between the pupils of the teachers who taught deductively and the pupils of teachers who taught inductively. In this regard, there is considerable doubt that the teachers were able to be consistently deductive or inductive in their approaches to teaching the unit on culture. It was assumed that if the teachers who used the experimental materials devised by the investigator did encourage their pupils to engage in the exercises regularly the children would search for information to answer their questions, think through the information they obtained, form generalizations, and make inferences. The investigator would have been well satisfied that pupils in the experimental classes were learning inductively if these steps were actually carried out. Unfortunately, procedures such as those just outlined require more time, generally speaking, than most teachers can allow their pupils to take in an ordinary daily schedule. Many of the experimental teachers indicated that they were not able to devote as much time to the unit of study as they would have liked. Therefore, it is a safe guess that the experimental teachers, who seemed to be somewhat intimidated by the amount of time required to successfully administer any of the exercises in the experimental booklets, were more frustrated than the control teachers, whose prescribed style of teaching was more economical of time.

Another major finding of the study was that several teacher orientations seemed to have been related to pupil achievement. "Pleasure in the use of tools" was negatively related to gains, and "resistance to social pressure" was positively related to gains. Significantly high correlations were obtained between post-test scores and "passive compliance" and also "performance anxiety." The relationship of anxiety about one's academic fortunes and test scores would seem most reasonable to the great majority of college students. Apparently a teacher's anxiety concerning the achievement of his pupils arises in part from the anxiety he feels about his own evaluation as a teacher. When combinations of scores on the Runner inventory were made into a "freedom orientation" score and a "control orientation" score, no significant relationships with pupil achievement were obtained.

It was believed that teachers whose assignments in the study seemed to conflict with their orientations would be less effective in carrying out their prescribed roles. However, the data do not support this research hypothesis. The investigator would like to investigate the hypothesis in other teaching-learning situations, especially since it is probable that instruments for measuring intellectual abilities (in addition to knowledge) would have produced information that would have revealed a great deal more about how effective the experimental teachers were in their roles.

Conclusions

Very little can be concluded from the findings of this study about the relationships of teacher orientations and pupil achievement. There are several clues about possible relationships to be found in the study, but too many confounding factors prevent the drawing of definite conclusions. A few generalizations might be tentatively formulated, however, in the light of what has been learned by the investigator in his efforts to carry out this investigation:

1. Orientations of teachers can probably be measured with enough accuracy to permit using the results of inventories such as the Runner Interview Form III to aid in the judicious placement of teachers in prescribed situations.

2. It is accepted by most thoughtful researchers that when studies of achievement in schools are attempted, there are many variables which cannot be controlled. However, one of the most important of all considerations in such studies is the adequacy of the instruments which are to be used to measure change. The study which has been reported did not make use of a properly constructed test which could measure changes in thinking abilities such as translation, comprehension, interpretation, extrapolation, application, analysis, synthesis, and evaluation. (The tests that were constructed for this study in an effort to obtain measures of changes in these intellectual abilities proved to be improperly constructed, incidentally.) It is axiomatic that if a researcher wants to measure particular areas of achievement his instruments must be capable of measuring those areas. The Anthropology Curriculum Project tests measure the pupil's ability to recall facts and terms (this is their

avowed purpose), and so there is every reason to expect that pupils whose teachers require them to spend a large portion of their time learning facts and definitions will score better on such tests than will the pupils of teachers who require them to engage in other curricular activities.

3. Traits, motivations, and attitudes are less subject to control than are teaching strategies. Although people are constantly trying to change the attitudes of other people, young and old, attitudes are highly resistant to modification, let alone transformation. However, personality variables are related to a teacher's ability to select voluntarily, and then to use effectively, varying strategies. If a teacher is flexible, he can utilize a wide assortment of strategies. If his predisposition is to resist changes in his ways of teaching, it is unlikely that he will be able to adapt successfully to new techniques. Resistance to social pressure, as demonstrated in this study, is a different orientation than resistance to innovation. People who are independent in their thinking and judgment are often open-minded and flexible; this is especially true of highly creative individuals (Torrance, 1962b, 1965). Accordingly, it is more often the rules-oriented person who has difficulty in changing his methods of teaching. One reason why the findings of this study do not support this generalization unequivocally is that a majority of teachers teach in the deductive or expository

mode. Consequently, only those among the control teachers who were especially freedom-oriented were "incompatible" with their assignments. It was easier for most of the teachers who took part in this study to assume the deductive role. At least an assumption along these lines can be made because, according to their self-reports, of the 15 experimental teachers only five taught in the inductive or hypothetical mode. All of the control teachers taught in the deductive or expository mode.

Recommendations

Most of what follows has been stated explicitly in the preceding pages, or at least implied. So, this is a summing-up of the investigator's convictions concerning the conduct of his research in the all-important area of teacher orientations.

1. More extensive research concerning the use of attitude inventories and other instruments for measuring attitudes and orientations should be undertaken. Studies which are carefully designed and which utilize video tape recorders, audio tape recorders, and other devices which can record a wide range of behavior are, probably, the only kind of investigations which can produce the data needed. Adequate planning with the teachers who participate in these studies, as well as their administrators, is mandatory. The teachers should feel unhurried and unharried.

All too frequently in studies such as the one reported here the teacher complains that he did not have enough time in which to do an adequate job of teaching the unit of study. When there is not enough time to do a decent job of helping children, it is doubtful that anyone benefits very much.

2. Tests which cover a wider range of educational objectives are being written now. More should be constructed and provided for teachers to use in evaluating their instructional programs. These tests should be used primarily for the purpose of self-evaluation, and they should not be used to promote school bond elections or justify pedagogical prejudices.

3. Such orientations as performance anxiety, resistance to social pressure, and passive compliance should be investigated in other teaching-learning contexts. It seems to the investigator that research findings concerning these orientations may very well prove valuable to school administrators and to the persons who help prepare college and university students for teaching careers.

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APPENDICES

APPENDIX A

PUPIL BOOKLET OF EXERCISES FOR THE ARUNTA

THE ARUNTA

Grades 1 and 4

THE CONCEPT OF CULTURE

R. E. Myers
University of Georgia
Athens, Georgia

February 1968

THE ARUNTA

THE CONCEPT OF CULTURE

Contents

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14 Comparisons 28
15 Man and Nature 30
16 The Initiation 32

Experimental materials written by R. E. Myers.

Not for general classroom use.

An Exercise about Individuality and Diversity Exercise 1

ONE NAME FOR MANY

1. The boys and girls in England call themselves English. The people in Italy call themselves Italians. What do the children of France call themselves? ____________________ What do we call ourselves? ________ ______________. Are we all alike? __________ How do we differ? Describe two or three kinds of people in our country who are very different from each other. ____

____

____

____

____

____

____

____

From your descriptions, you can see that we Americans come in assorted sizes, shapes, and colors

2. What do the people in Australia call themselves? ____________________ Are they all alike? ______ Do you know anything about the different kinds of people in Australia? Where did most of their ancestors come from?

____

____

Are any of the people who live in Australia native to the land? That is, are there any people living on that continent whose ancestors lived there a thousand years ago or more? _______ If you do not know of any native or aboriginal peoples of Australia, you can learn about them by looking in reference books (such as encyclopedias) and magazines (such as The National raphic). Name at least two different kinds of people who are native to Australia.

. What people in our country are similar to the ones you have described?

w are the natives of America and the natives of Australia alike?

w are they different?

An Exercise about the Geographical and Topographical Features of Central Australia

Exercise 2

THE MIDDLE OF SOMEWHERE

1. The group of aboriginees who live in the middle of the island-continent we call Australia is named the Arunta. Do you know anything about that part of Australia? What do you know about the climate of that part of Australia? Using as clues the information you have about that area of the world, just guess what the rainfall, humidity, temperature ranges, and prevailing winds might be in central Australia.

precipitation ____

humidity ____

temperatures ____

winds ____

Now, check up to see if your guesses were close. Go to an atlas or a geography book to see what the climate is really like in the part of Australia. Write the information in the spaces below.

humidity ____

temperatures ____

precipitation ____

winds ____

Can you explain why your guesses were good or poor? ________________

____

____

____

Since you now know a little about the climate of central Australia, you might be able to do some guessing about what the people are like who live there. What do you think they look like? ____________________

____

____

Why do you think so? ____________________________________

____

How do you think they dress? ________________________________

____

____

Why do you think so? ____________________________________

____

What kind of shelter do you suppose they have? ____________________

____

____

Why do you think so? ____________________________________

____

On page 7 is an illustration of three Arunta working on a shelter. You will be able to see if your guess was correct, and you will have an opportunity to see what the Arunta look like. How close were your guesses? Were you fairly close with regard to the appearance of the people? ______ Were you a good guesser as to their dress? ____________________ How close did you come with regard to the kind of shelter the people have? ______ How can you become a better guesser concerning important matters?

____

____

____

ercise 3 Name ____________________

AN ARUNTA HOUSE

1. Look carefully at the picture of the Arunta building a house, which appears on the next page. Everyone help build a house. There are no special house builders among the Arunta. What are the advantages of not have particular persons who build the houses? ____________________

____

____

What are the disadvantages of having everyone help with the house-building?

____

____

____

2. Just from looking at the illustration, you can probably imagine the steps by which an Arunta house is built. What are they?

Step #1 ____

Step #2 ____

Step #3 ____

Step #4 ____

Would there be any more steps? _____ If so, what would the steps be?

____

____

3. Have you ever built anything similar to the Arunta house? _____ If so, what was it? ____

____

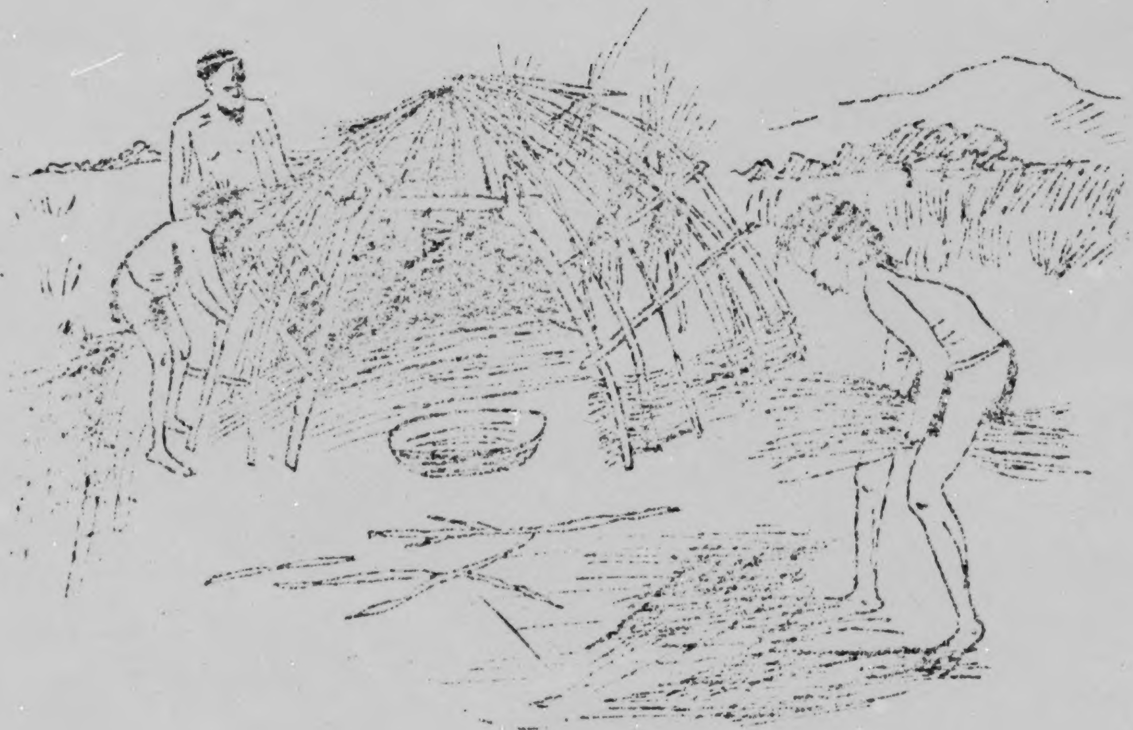
What did you like about it? ____________________________

____

What didn't you like about it? __________________________

____

How long did it last? ________________________________



rcise 4 Name ____________________

ARUNTA LIFE

1. On the next page, you can see two scenes of Arunta life which are typical of the way in which they live. The scene at the top of the page shows three men sleeping by a windbreak. The windbreak gives some protection from the cool night air, and the fires give some warmth. The scene below shows an Arunta family on the move. They are nomadic hunters and gatherers. They carry the few tools which they use with them.

. By just looking at the two illustrations, you should be able to make some good guesses about the conditions of Arunta life.

a. What kind of vegetation grows in the part of Australia where the Arunta live? ____

b How many people would inhabit this area? Would it be sparsely populated or densely populated? ____________________________

c. Do the Arunta have many possessions? _____ Why? ____________________

____

d. Do the Arunta depend a great deal upon fire? _____ How do they make fire?

____

e. What kinds of laws or rules would the Arunta live by? ______________

____

____

____

____

____

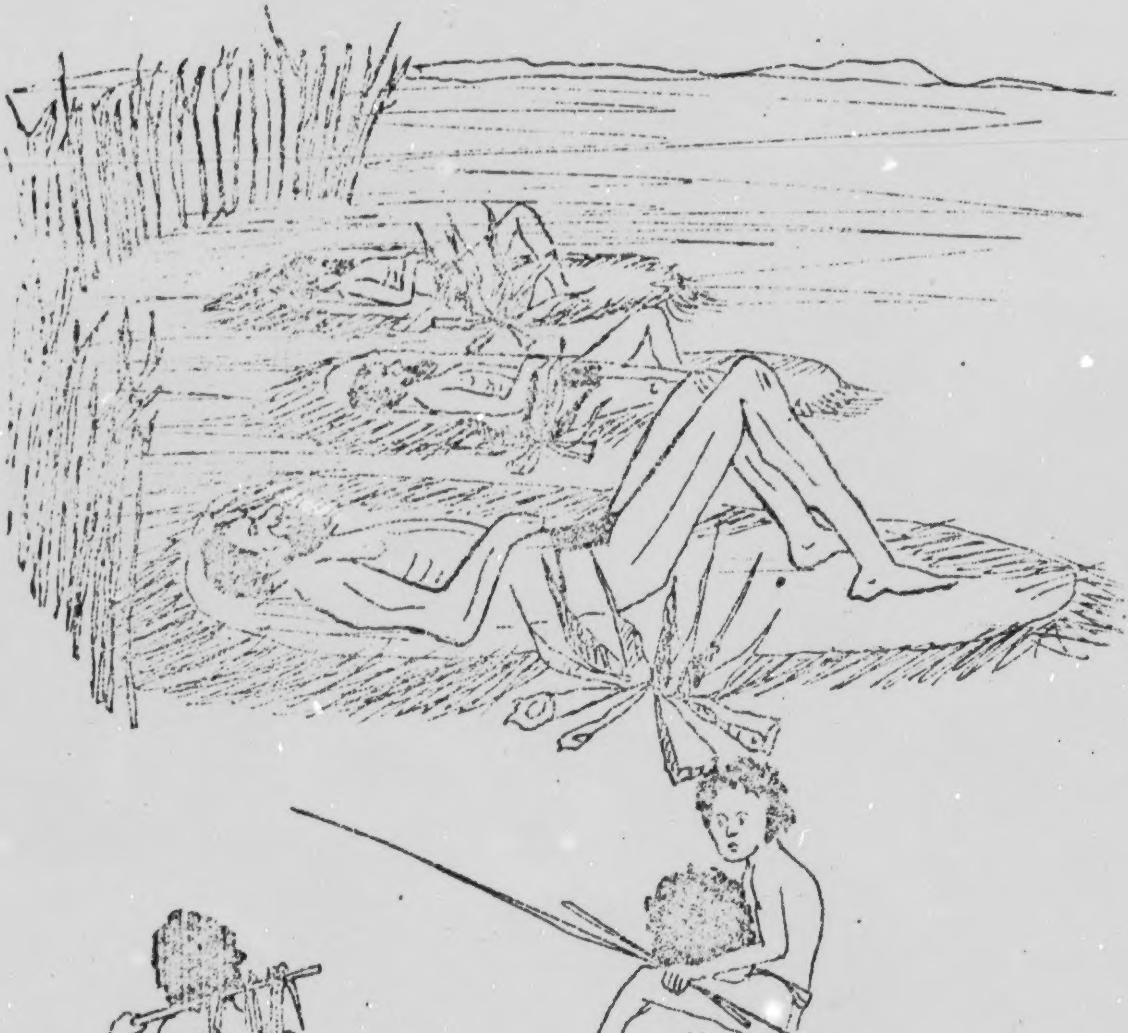
____

. Must every group of people have rules by which to live? _____ Explain.

____

____

____



rcise 5 Name ____________________

NETS

1. The illustration on the next page shows an Arunta making a string bag. These string bags are made from root fibers. The bags are used to carry goods. How else might the string bags be used? Draw a picture of a string bag being used in this way.

2. The Arunta's string bag is a type of net. Nets are used in many different ways--as something to momentarily hold a basketball when it goes through a hoop, for catching fish, to hold women's hair, for loading and unloading ships, for catching birds and butterflies, etc. As you can see, many nets are used to trap things. Do you like to trap things?_____ Here are some things that people often try to trap; tell how you would trap each one.

a. heat ____

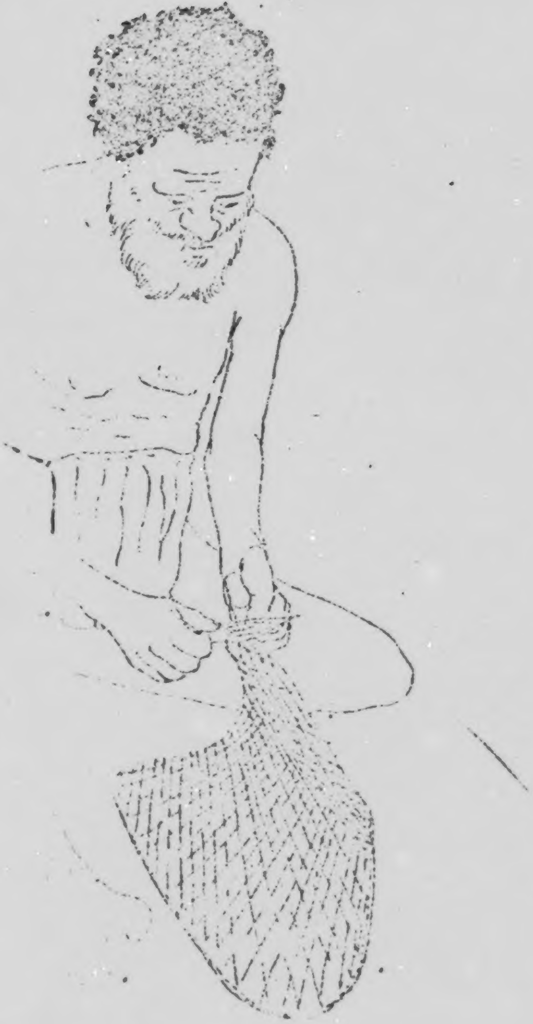
b. someone telling a lie ____

____

c. ideas ____

d. happiness ____

____



rcise 6 Name ____________________

FOR WORKERS ONLY

Look at the objects that are pictured on the next page. What is the word that we use for these kinds of things? ________ What is another word that might be used to name these objects? __________ We have tools in the United States to accomplish the same tasks as the tools the Arunta use. Actually, we may have several different tools to do the job that one Arunta tool is used for. See how many tools you can think of that have the same purposes as these Arunta tools.

spear throwers ____

____

spears ____

____

wooden bowls ____

____

grinding stones ____

____

digging sticks ____

____

It must may be that you or one of the members of your family uses a tool that is very much like one of the Arunta tools. If so, which one is it?

____

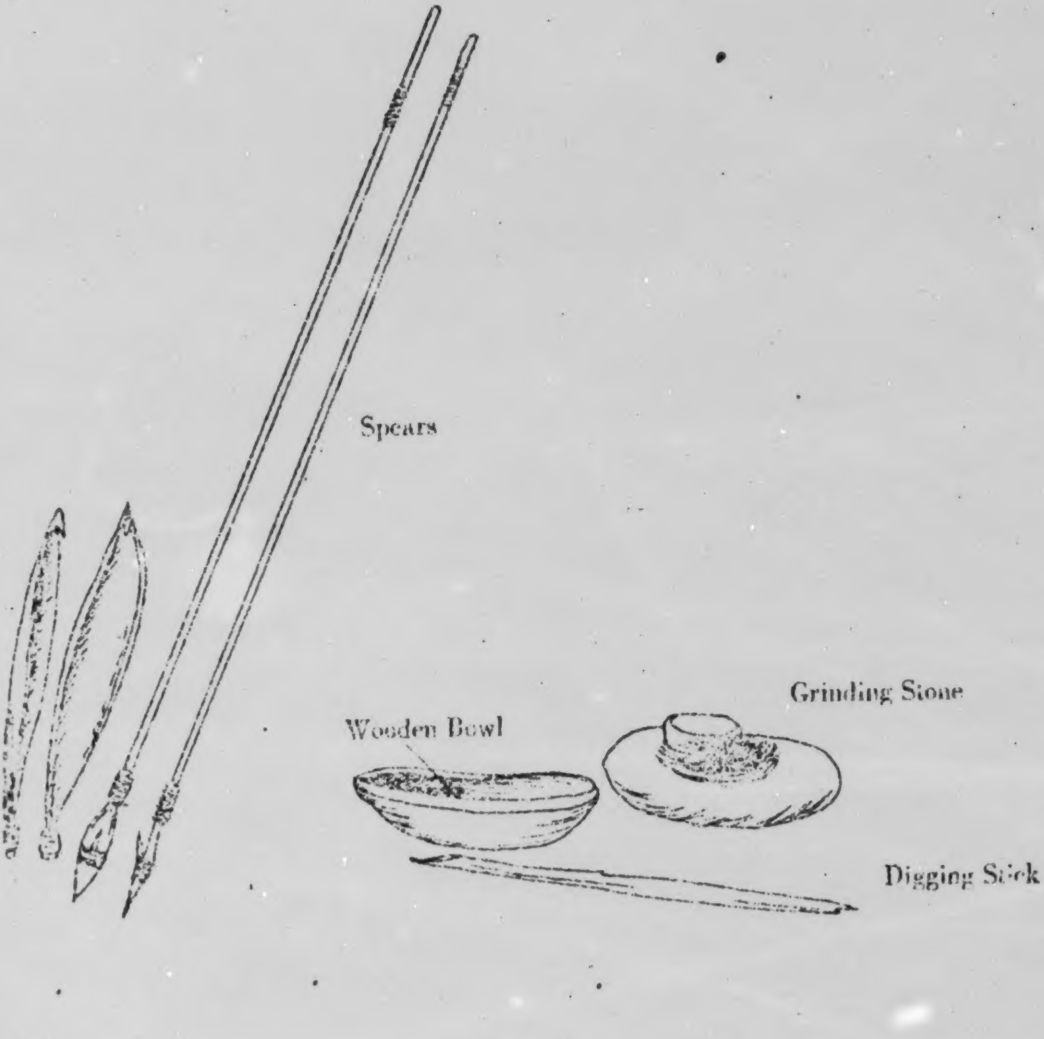
How often do you think these tools must be replaced? __________

____

Does every Arunta family have to make its own tools? ____ Why do you think so? ____

Have you ever made any tools? ____ If you have, name them. __________

____


Spears
Grinding Stone
Wooden Bowl
Digging Stick

rcise 7 Name ____________________

A MATTER OF GOOD SENSES

The man shown on the next page is throwing a spear. An Arunta uses the spear thrower to add force and distance to his throw of the spear. If they are armed only with spears, the Arunta men must depend upon their senses to a great extent. They must be able to see, hear, and smell very well in order to kill their prey.

How sharp are your senses? See if you can answer these questions.

a. From which direction did the wind last come? ____________________

b. When is traffic heaviest on your street or road? ____________________

c. What is the hottest time of the day in February? ____________________

d. What is the coldest time of the day in September? ____________________

e. Which room in your house gets the most sun during the winter? __________

____

f. Who is usually the last one to come into the classroom in the morning?

____

g. How many tines does a fork have? ____________________________

h. What is the difference between the leaf of a pear tree and the leaf of an apple tree? (Draw both leaves in order to make the distinction clear.)

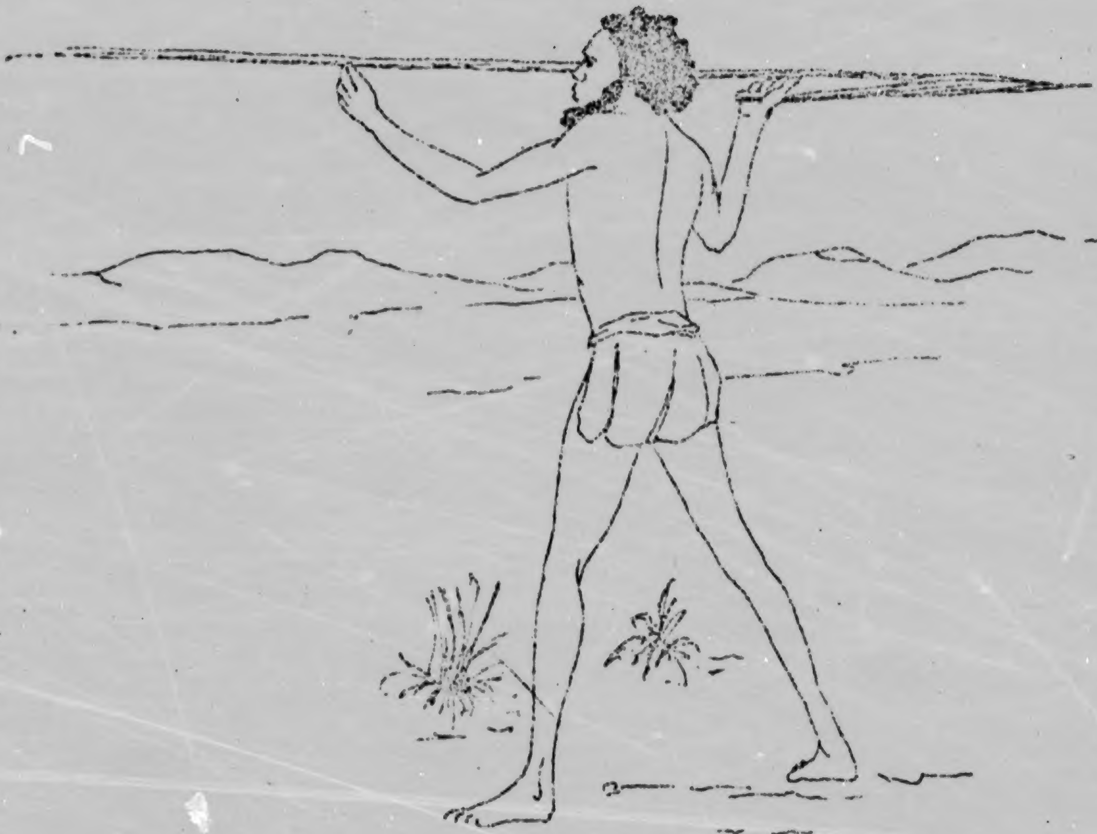
Were you able to answer all of the questions? _____ If not, can you think of a reason why you couldn't? ______________________________

____

If an Arunta boy or girl lived with you for a few days, do you think he or she could answer the questions? _____ Why do you think so? ______________

____

____



Exercise 8 Name ____________________

THE NEW FROM THE OLD

1. The picture on page 17 shows an Arunta man making a new spear thrower. He is using a spear thrower to make a new one. It may seem strange to you at first that a tool should be used to produce another like it, but this happens often when people go about making tools. You can see that we nearly always need tools to make other tools. Can you think of any tools that aren't made by other tools? _____ If so, what are they?

____

____

2. Let's see if you can imagine how other Arunta tools are made.

Would an Arunta need tools to produce a digging stick? _____ If so, what tools would he need? ______________________________

Would an Arunta need tools to produce a wooden bowl? _____ If so, what tools would be needed? ______________________________

Would an Arunta need tools to produce a spear? _____ If so, what tools would he need? ______________________________

Would an Arunta need tools to produce a grinding stone? _____ If so, what tools would be needed? ______________________________

Can you think of any examples of older things producing newer things?

____

How can something old produce something new in:

a. sports? ______________________________

b. painting? ______________________________

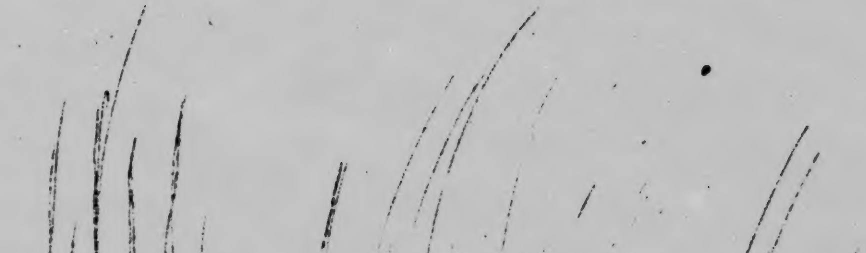
c. food? ______________________________

d. weather? ______________________________

What can you say about the relationship of old and new things? __________

____

____



rcise 9 Name ____________________

THE HUNT

The illustration on the next page shows two Arunta men hunting a kangaroo. As you can imagine, the hunters must have a great deal of skill and patience in order to stalk and kill a kangaroo. Let's imagine that you are an Australian reporter and you have gone into the central part of Australia to get a story about the Arunta. You have spent some time with the Arunta people and have learned to speak their language. What questions would you ask these two hunters when they returned with the kangaroo?

____

____

____

____

____

What questions would you ask the two hunters if they came back empty-handed?

____

____

____

____

Do you suppose that a newspaperman really might be able to live with the Arunta and learn their language? _____ Explain. ____________________

____

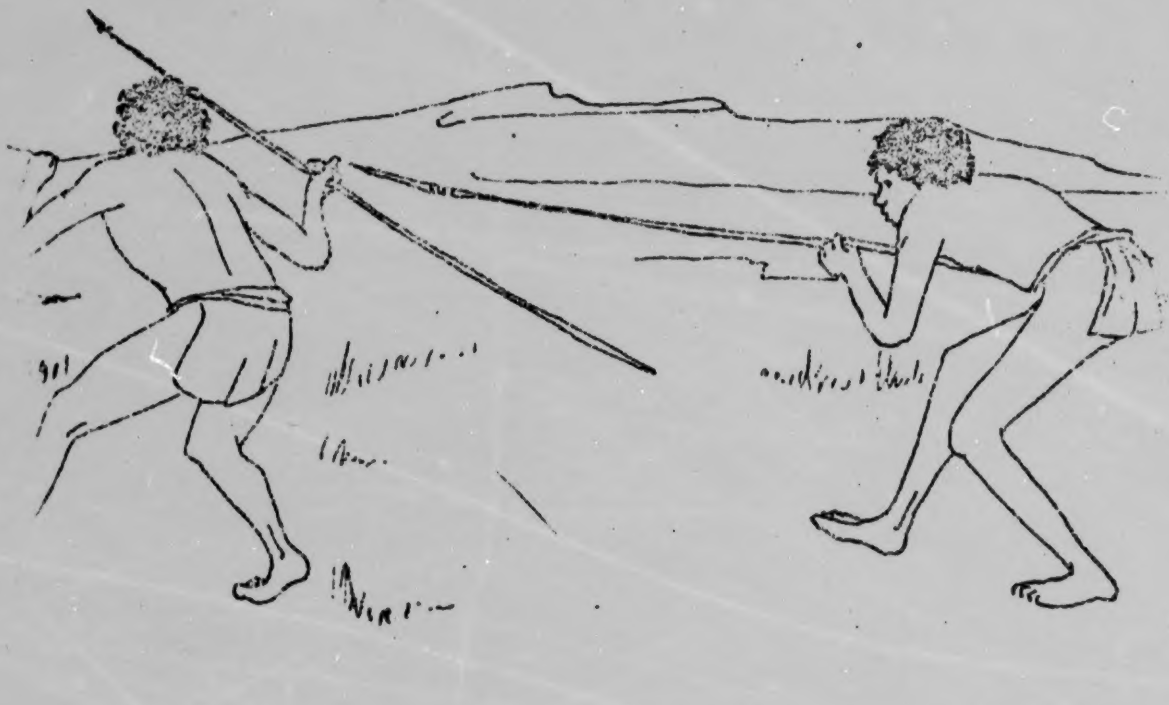
____

____

Why might kangaroos be hard to kill? (If you don't know very much about kangaroos, learn about them in books or by asking people who are well-informed about these marsupials.) ____________________

____

____



ercise 10 Name ____________________

GIVE ME SOME SKIN

1. The picture on the next page shows what happens when the hunters bring home a kangaroo. The Arunta cook an animal in its skin on top of hot coals. They do not generally use kettles or pots for cooking. Cooking an animal in its skin ruins the skin for any other use. Would the Arunta be better off if they skinned the kangaroo before cooking it? In what ways would they be better off? ____

____

____

____

2. What are some of the different ways that girls and boys in our country learn how to cook? ____

____

____

____

____

Do you know how to cook? _____ If so, how did you learn? ______________

____

____

3. Do you know of any cooking practices in our country that are wasteful? ____ If so, what are they? ____

____

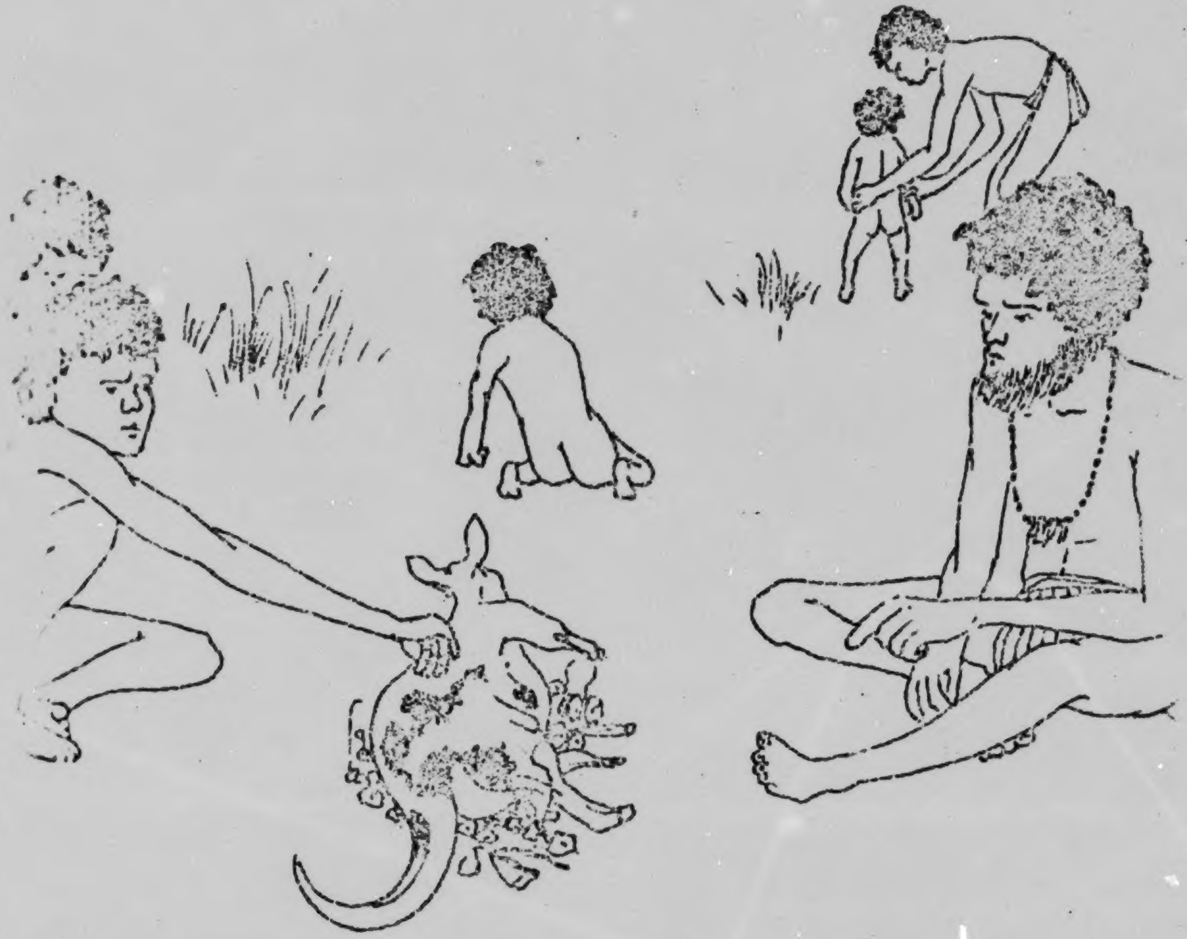
____

What important things are lost because of the way we cook food?

____

____

____



Exercise 11

Name ____________________

AN ARUNTA FAMILY

1. The picture on page 22 shows an Arunta family. This is a nuclear family, made up of a father, a mother, and their children. Most American families are nuclear. What is an extended family? ______________________________

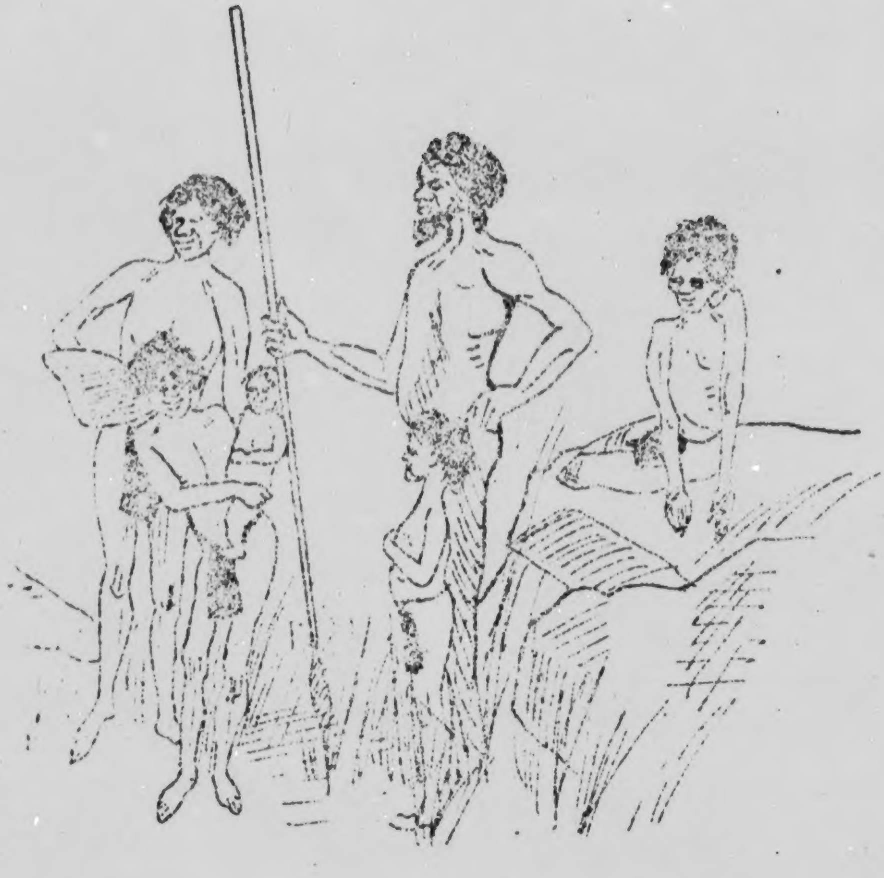
____

2. Make a representation of the illustration in the space below. Instead of reproducing the drawings, make stick figures to represent the six members of the Arunta family.

3. Now, make up names for each of the people in the family. Write the names near the figures in your representation. Try to guess the ages of the members of the family. Tell what their responsibilities probably are. The chart below will help you put all of this information in order.

Name You've Chosen	Age	Main Responsibilities

ut how long do you think the average Arunta male lives? ______ How long do think the average Arunta female lives? ________



Exercise 12 Name ____________________

GAMES

1. Turn to the next page. Does the Arunta boy look as if he is playing? ____ What kind of playing is he doing? ____________________

The games Arunta boys play are based on things they see their fathers do, such as hunting with spears or boomerangs. This boy is learning to throw a boomerang.

2. Do American boys imitate their fathers when they play games? ________ What games do boys in our country play that are very much like their fathers' jobs? ____________________

____

____

What games do girls play in which they imitate their mothers? ________

____

____

____

Would the Arunta girls play games similar to the ones that American girls play? ____ Why or why not? ____________________

____

____

3. Which of the American games would the Arunta children understand best?

____

____

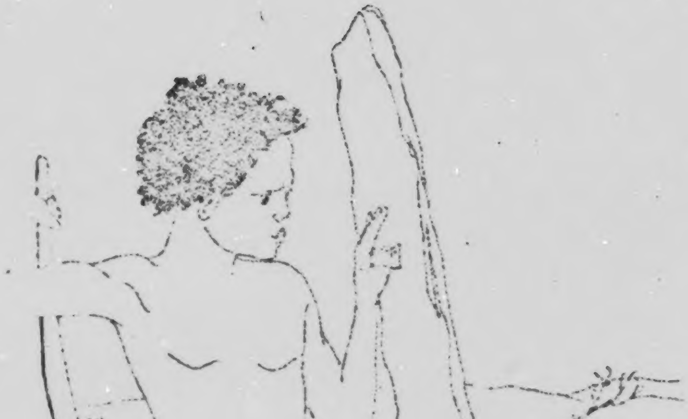
____

Which of the American games would the Arunta children enjoy most?

____

____

____



Exercise 13 Name ______________________

WHAT DO THEY HAVE IN COMMON?

1. The picture on the next page shows the members of a local group meeting around a fire. The Aruntá men band together in local groups for many social functions. The men in the local group are close friends. What are the different names we give to groups of men who regularly get together in our society? ____

____

People get together because they have common interests and purposes. What do you suppose are the common interests of the Arunta men in the illustration? ____

____

____

2. One characteristic that thinking people have is that they see relationships between things. They see that some things are alike and some are quite different. Let's see if you can find some similarities in a variety of items. What do the following things have in common?

a. spear hoe hammer

____

b. kangaroo 'possum wombat

____

c. fire clothing blanket

____

d. protection entertainment companionship

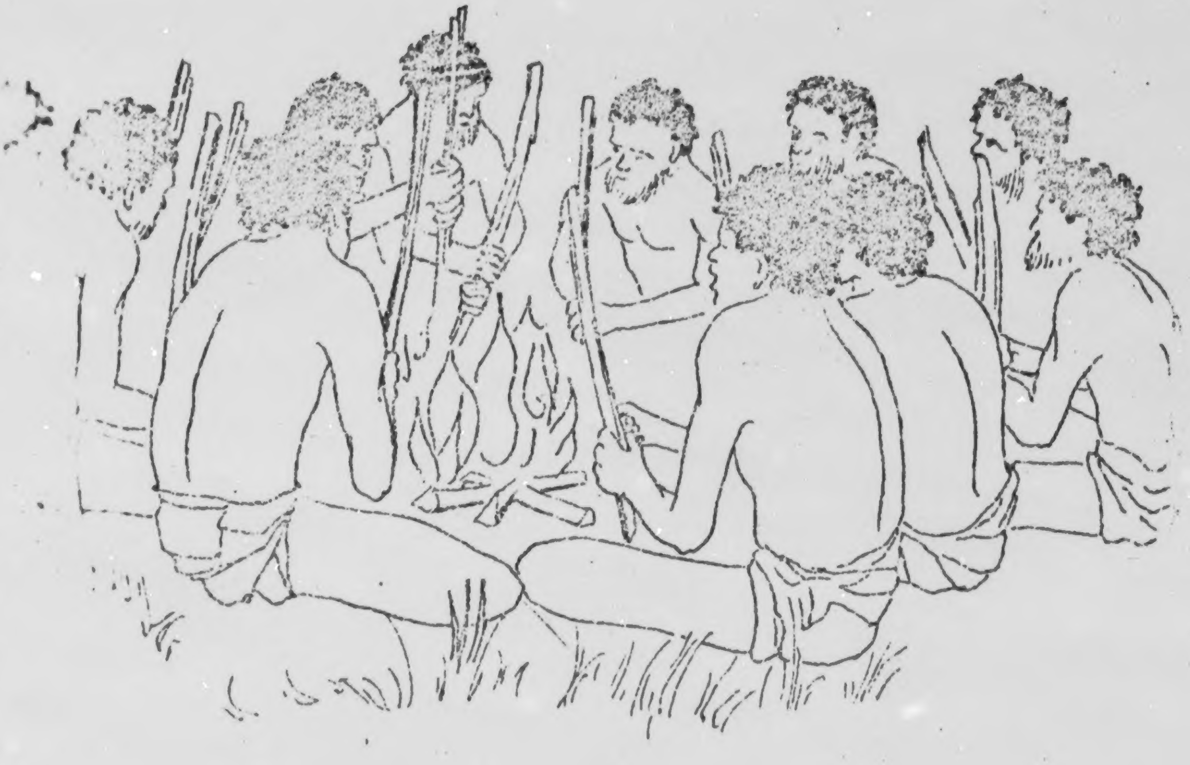
____

e. land labor tools

____

f. beetle kangaroo grub

____



ercise 14 Name ____________________

COMPARISONS

Turn to the next page and examine the illustration of the four Arunta men getting ready for a totem ceremony. Does this scene remind you of anything you have seen before? _____ If so, what does it remind you of?

____

____

Have you ever watched a group of crows or blackbirds and thought that they were quite a bit like people, as they perched on a tree or on a fence. The birds make certain noises from time to time, but mostly they just look around. Old men in parks behave in much the same way. Do the four men in the illustration look like four men who have just gotten up from their park bench? _____ If not, can you compare them with a group of some other people, or even with four animals or plants? ____________________

____

____

When you compare one thing with another, you are using a figure of speech that is called an analogy. Why don't you make up some analogies for the Arunta? You should be able to compose at least five analogies about the Arunta, using what you have learned about them in this booklet and in the other materials that you have been reading. We'll give you the first part of a couple, and then you can do the rest on your own.

a. An Arunta hunting a kangaroo is like a ____________________

____

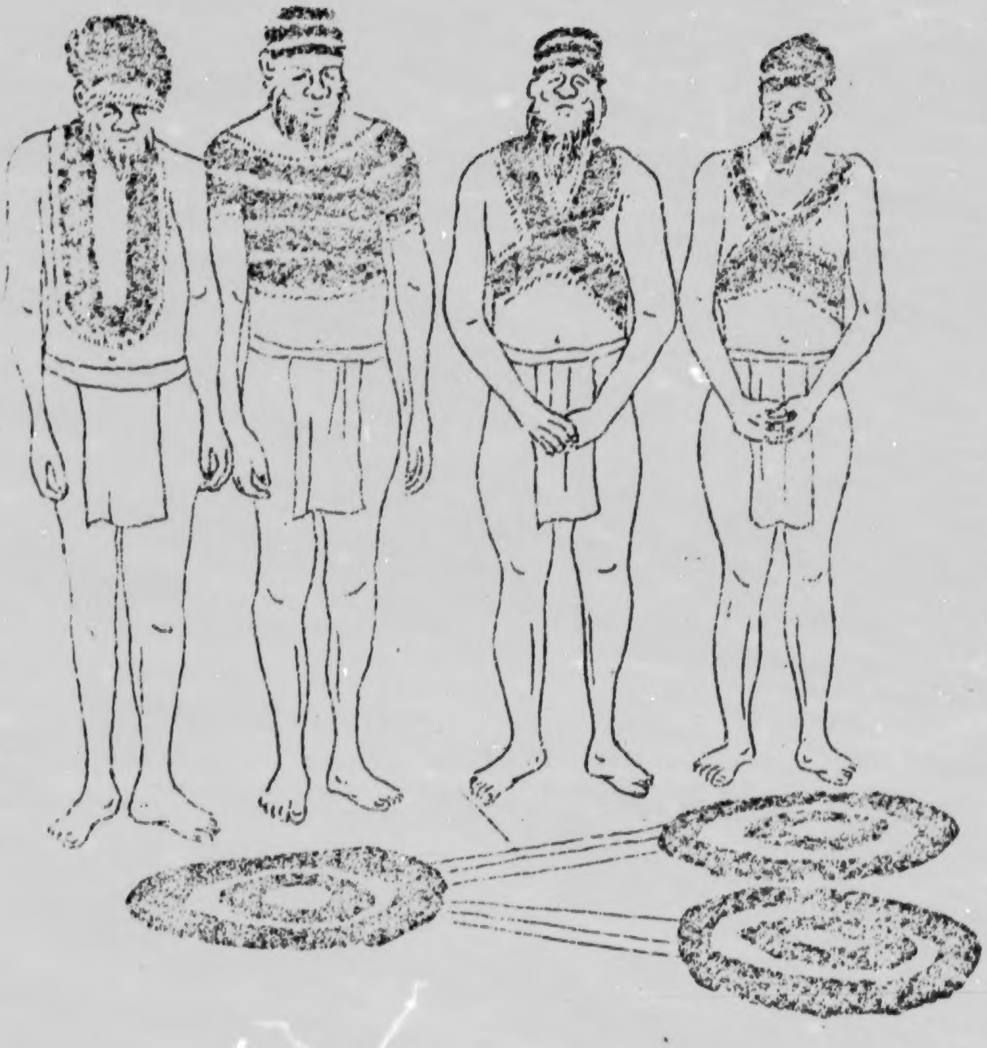
b. The Arunta boy's small spear is as important to him as __________

____

c. ____

d. ____

e. ____



Exercise 15 Name ____________________

MAN AND NATURE

On the following page, you can see an illustration of three men performing in a totem ceremony. Totem ceremonies help the Arunta to feel that they will be able to get enough food to meet their needs. Does this scene remind you of the ceremonies of any Americans? _____ What similarities can you think of between the way the Arunta tries to deal with his environment and the way an American Indian people such as the Navaho or the Hopi try to deal with their environment? ____________________

____

____

____

____

Do the Hopi and the Navaho have similar ceremonies? ____ Explain. (If you don't know, find out by looking in books about the Hopi and the Navaho. The World Book has a good article about American Indians.)

____

____

____

____

If you believed, as the Arunta do, that ceremonies could bring about good fortune for you and your family, what would be the purposes of your ceremonies? ____________________

____

____

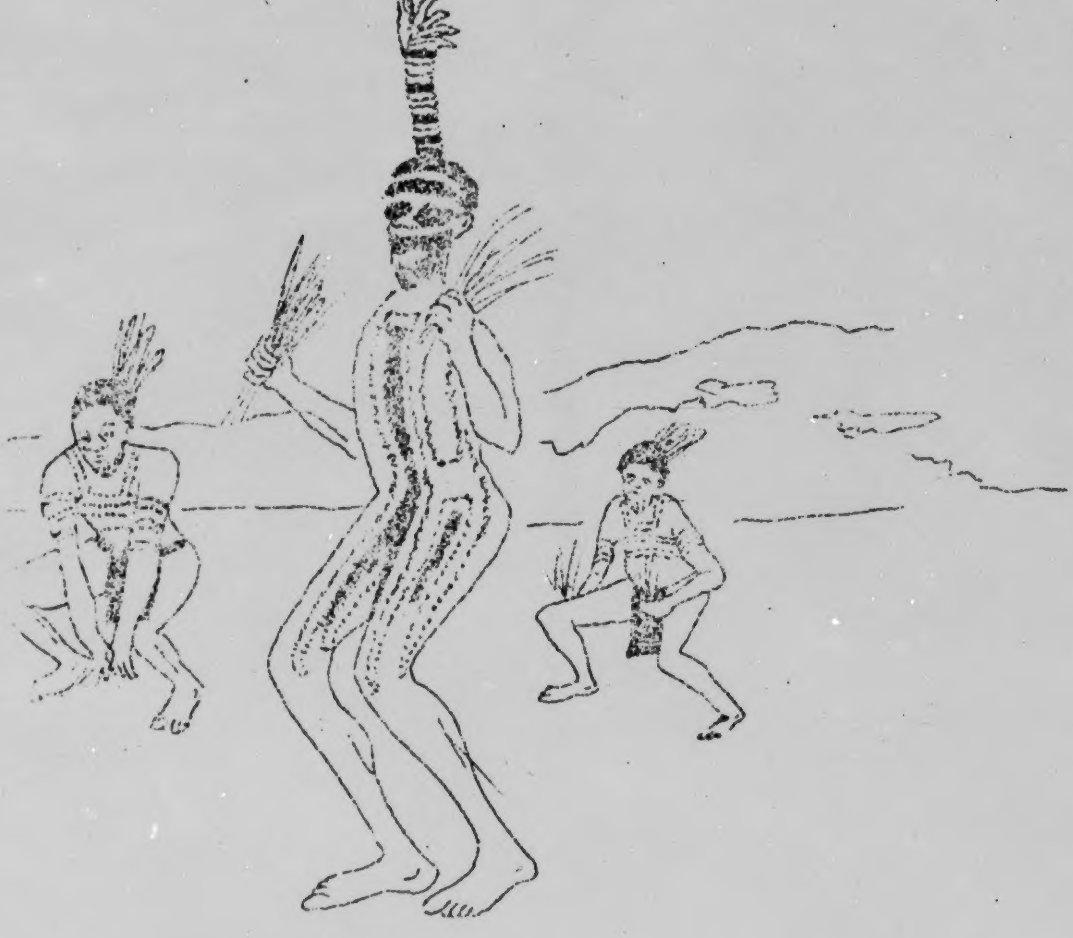
____

____

Is one of your ceremonies designed to bring rain? ____ Why or why not?

____

____



Exercise 16 Name ____________________

THE INITIATION

1. The picture of the boy on the following page may or may not surprise you. You have seen in the last two exercises that the Arunta men have ceremonies in which they paint their bodies; and you may have known that in many countries, including our own, boys are initiated at certain ages into special groups. What does it mean to be "initiated"?

____

____

____

2. Do you know of anyone who has been "initiated"?__________ If so, who was the person? ______________________________

Was there a ceremony connected with the initiation proceedings? _____ If so, describe it. ______________________________

____

____

____

3. Why don't you write a story about the Arunta boy and the experiences he has before being initiated? First, you will probably want to give him a name and think about what kind of life he leads. If you would prefer to draw instead of writing a story, why don't you draw a series of pictures (like a comic strip) of his adventures? You can use the space below for getting started on your story.

____

____

____

____

____

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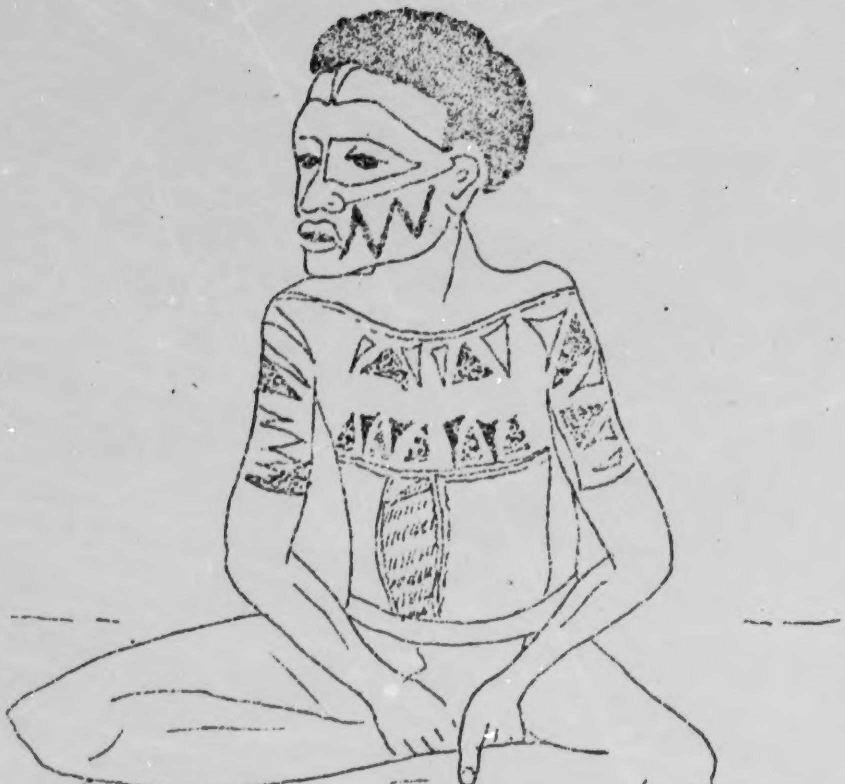

APPENDIX B

PUPIL BOOKLET OF EXERCISES FOR THE KAZAK

THE KAZAK

Grades 1 and 4

THE CONCEPT OF CULTURE

R. E. Myers

University of Georgia

Athens, Georgia

February 1968

THE KAZAK

THE CONCEPT OF CULTURE

Contents

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14 One Man's Family 30
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Experimental materials written by R. E. Myers and not for general classroom use.

Anthropology Curriculum Project

University of Georgia

1968

Exercise 1 Name ______________________

WHERE THE HEART IS

1. If you were a cattle rancher in one of the southwestern states such as Arizona, what kind of house would you probably be living in?

____

If you were a Hopi Indian living in the same state, what kind of dwelling would you be living in during the summer? ______________________

If you were a Polynesian fisherman living on the island of Tahiti, what kind of dwelling would you probably call your home? ______________

____

If you were an Indian in the Northwest Territories of Canada who hunts reindeer, in what kind of dwelling would you live during most of the year?

____

2. The Kazak are a herding people who live in the steppes of southwest Asia. They build a house which is called a yurt. (See the next page.) The framework of the yurt is made of sticks which are tied together. The walls and roof are then covered with large pieces of felt. The yurt shown on the next page is a large one. Many are smaller.

3. Think about the different kinds of dwellings that people such as the Kazak, Hopi, Polynesians, and ranchers of the American Southwest build. What are some of the reasons they build the particular kinds of houses that they live in? ______________________________________

____

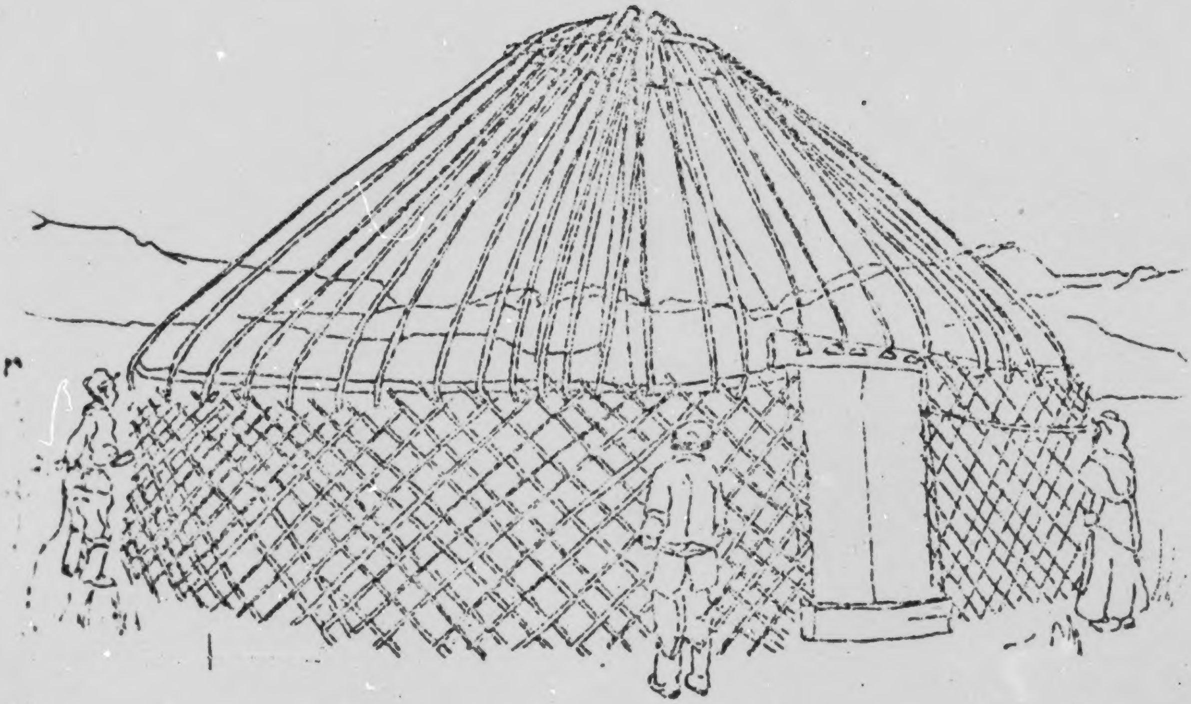
____

____

____

You should have been able to think of at least three major factors that determine what kind of a dwelling people call home. Which of these factors is most important in a tenement building in New York or Chicago?

____



rcise 2 Name ____________________

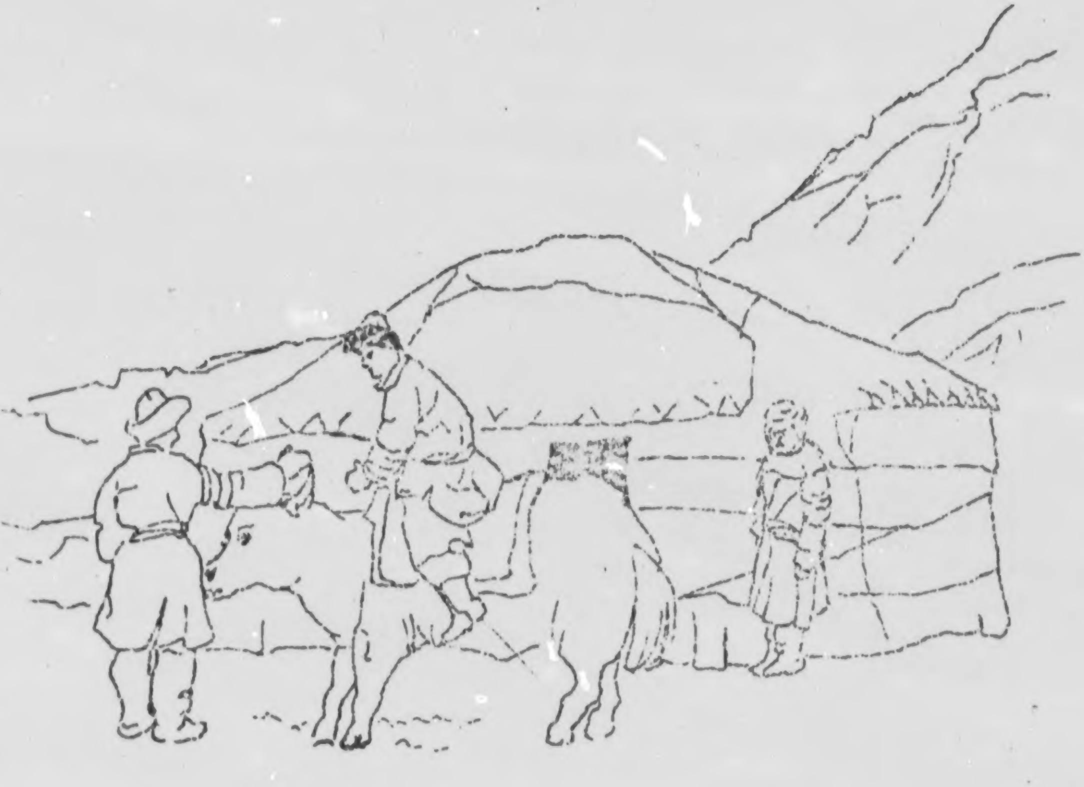
IN ALL SHAPES AND SIZES

1. Look around the room. Do you see anything that is in the same shape as some kind of building? Write the name of the object in the column on the left-hand side of the page, and write the name of the building--or a description of it--on the right-hand side of the page.

object	building

2. If you saw photographs of the interesting buildings at Expo 67 in Montreal, or if you were lucky enough to have attended that fair last year, you know that architects are designing buildings which have unusual shapes. Do you think that the architects have good reasons for designing buildings in the ways they do? What would be some of their reasons?

Now, turn to the next page and look at the picture of a yurt which was built by some Kazak. What does it remind you of? ____________________ It has no windows, but there is an opening left for the door. The animal shown in the picture is called a yak. The yak is a mountain ox used to carry people and packs when the mountain-dwelling Kazak move from place to place.



From just looking at the picture of the yurt, would you say that it is a summer home or a winter home? ____________________

Why do you think so? ____________________

____

____

What do you think the roof of the yurt is made of? ____________________

Would this be any kind of indication as to the way the Kazak live? ________

Explain. ____________________

____

____

Are there some things about the yurt that you don't understand? What questions would you ask the men in the picture, if you could, about this house?

____

____

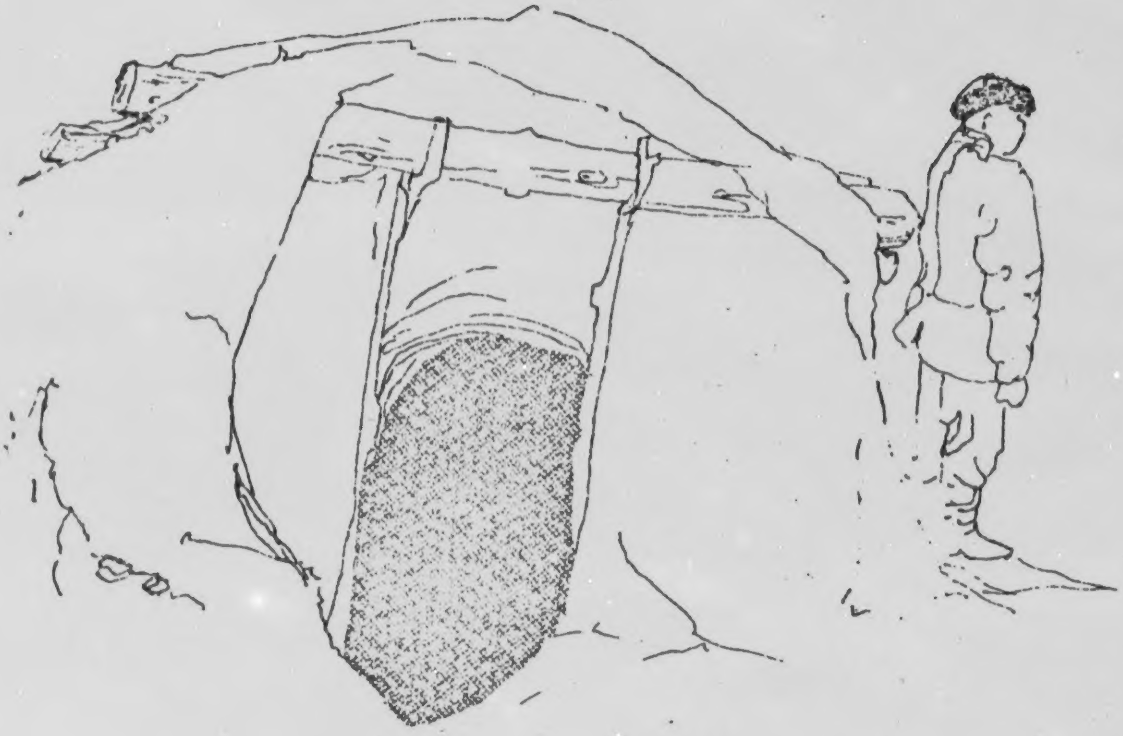
____

____

____

____

____



ercise 3 Name ____________________

TWO OF A KIND?

Look at the picture on the previous page. As the caption states, it is a picture of a Kazak winter house. In what ways does it differ from the house on page 5? ______________________________

____

____

____

In what ways are the two houses alike? ______________________________

____

____

____

The Kazak spend the winter in the same camp every year. Many of the Kazak build small sod houses. These sod houses are very warm because the thick dirt walls give protection against the cold. Do you know what sod is? Is it the same thing as mud? _____ Explain. ______________________________

____

Let's imagine that you are a Kazak living in a sod house. What would you do in each of these situations?

a. Someone that you don't like approaches your house. You see that he is going to call on you. You are inside the house. What will you do?

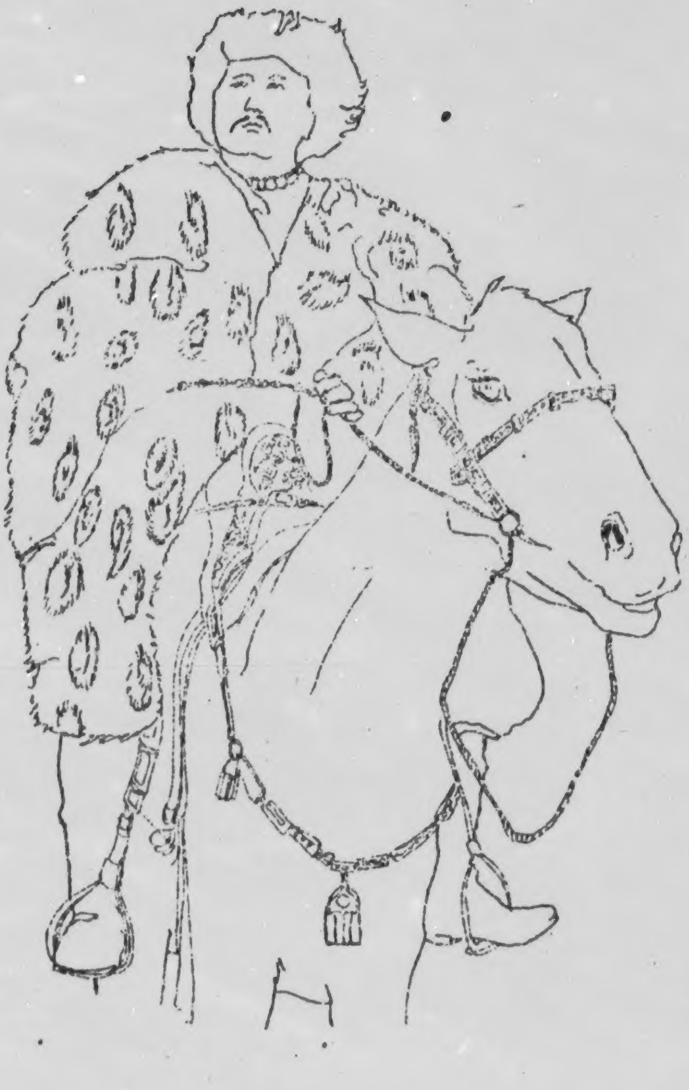
____

____

b. The winter has been unusually mild. Suddenly there is a great downpour of rain. Will you be concerned? If so, what will you be concerned about? ______________________________

____

There have been rumors among your clansmen of a large band of wolves roaming nearby. Are you quite safe in your sod house during the night? Explain why or why not. ______________________________



Exercise 4

Name ____________

A MAN AND HIS HORSE

1. Turn back to the previous page and look carefully at the man astride the horse. What kind of person is he? ____________

____

Why do you think so? ____________

____

What clues can you find concerning his position or rank? ____________

____

____

Does he look like anyone you know? ______ If so, who? ____________

What is there about him that reminds you of this person? ____________

____

2. What are your impressions of this man? Let's see if you can make up some similes to describe him. For example, you might say that he looks as big as a bear. Try to think of several similes.

He looks like ____________

He looks as ____________

He looks like ____________

He looks as ____________

. The man actually is a Kazak clan chief. The clan chief is usually a man of the largest and richest household in the clan. This chief is wearing a coat of fine fur and boots of good leather. The saddle and bridle of his horse are decorated with silver and copper ornaments. What is a clan? ____________

____

____

What do important men in our country have to show that they are rich, powerful, or famous? ____________

____

Exercise 5 Name ____________________

WEAVING AND WORKING

1. Have you ever done any weaving at school or home? _____ If you have, what did you like about weaving? ____

____

Was there anything you disliked about it? ____________________________

____

Turn to the next page and look at the illustration of the Kazak woman weaving a strap. The strap is made of sheep wool, and it will be used to hold the yurt frame together. It will also serve as a decoration. Do you think the woman enjoys her weaving? _____ Why or why not? ______________

____

Do you think her job is an important one? _____ Explain. ______________

____

____

Some people in our country also weave by hand. Why do you think that they do so? ____

Might there be another reason? ____________________________

____

Do you think the Kazak people ever grumble about doing their jobs? _____

Why do you think so? ____

____

____

What are some of your jobs or chores at home and at school? ____________

____

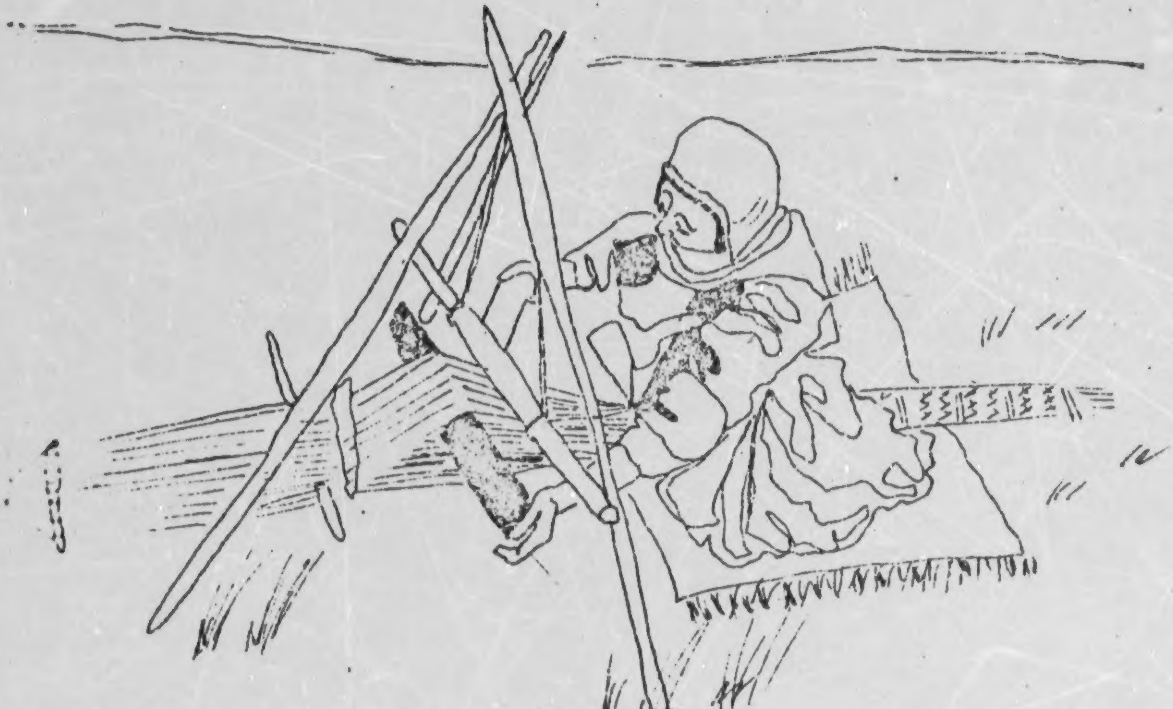
____

Which are your favorite jobs? ____________________________

____

Which are your "un-favorite" jobs? ____________________________

____



Exercise 6 Name ______________________

TOO MUCH OR TOO LITTLE

1. Did you know that many kinds of animals have almost become extinct because men have killed them in great numbers? Well-known examples of this tragic destruction of wildlife are the extermination of huge herds of American buffalo and the wholesale killing of the egret. Because people have learned that both human life and animal life suffer when wasteful killing of wildlife occurs, laws have been passed in most countries in order to protect certain species and to maintain the "balance of nature." Generally speaking, the less a group of people has in the way of natural resources such as trees, grass, water, and animals the less they waste. The people of Mexico, for example, use the maguey plant in a great many important ways. And the Kazak woman on the next page is also showing how her people use what they have for their greatest benefit. The Kazak women scrape and treat the skin of sheep that have been killed for food. They make sheepskin jackets which are worn in very cold weather.

2. Let's see how good you are at making use of what you have.

   a. How could you make better use of your teacher? ______________________

   ____

   b. What could you save from rusting? ______________________

   ____

   c. How could you make better use of your time after school? __________

   ____

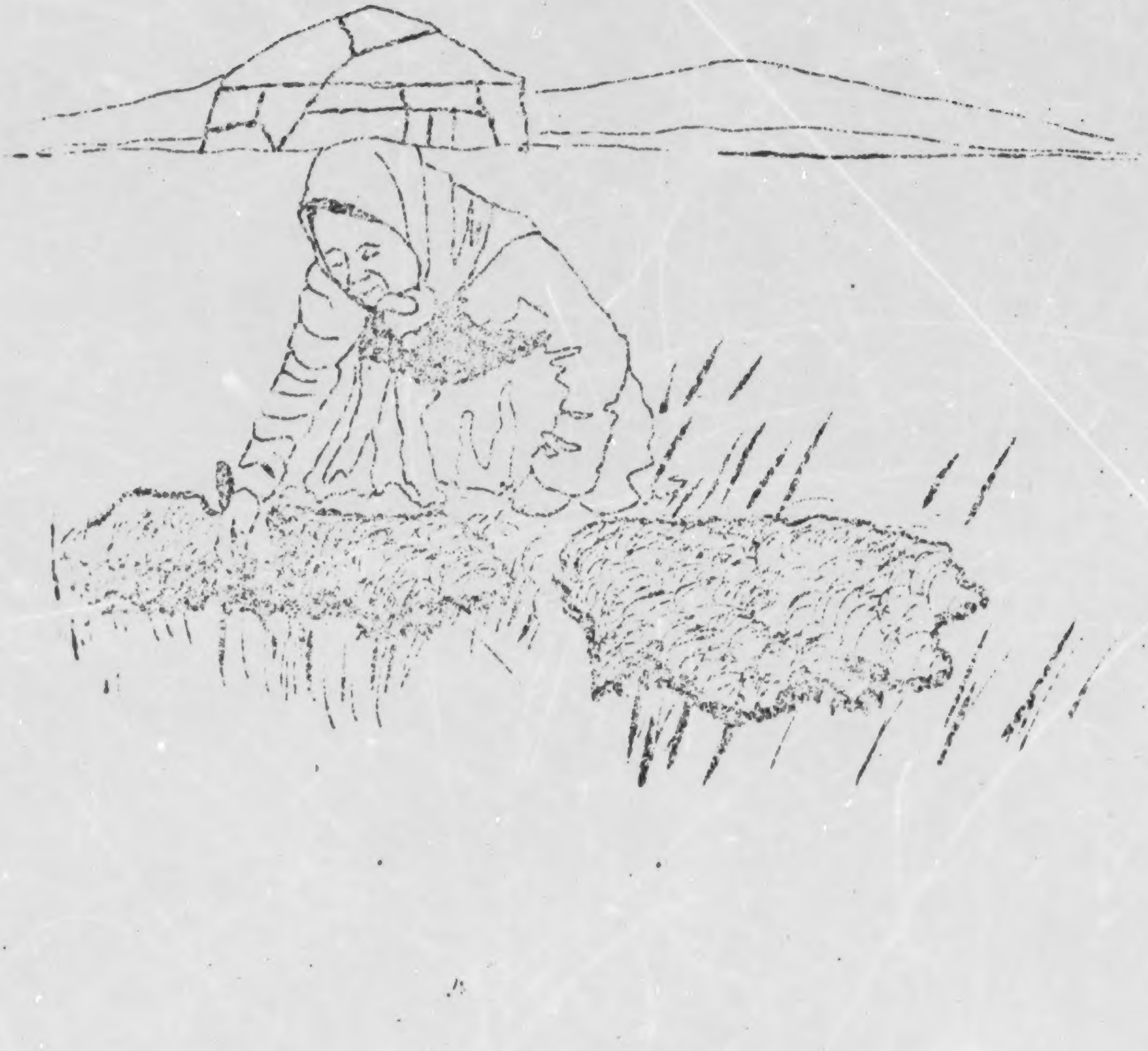
   d. What could you keep from spoiling? ______________________

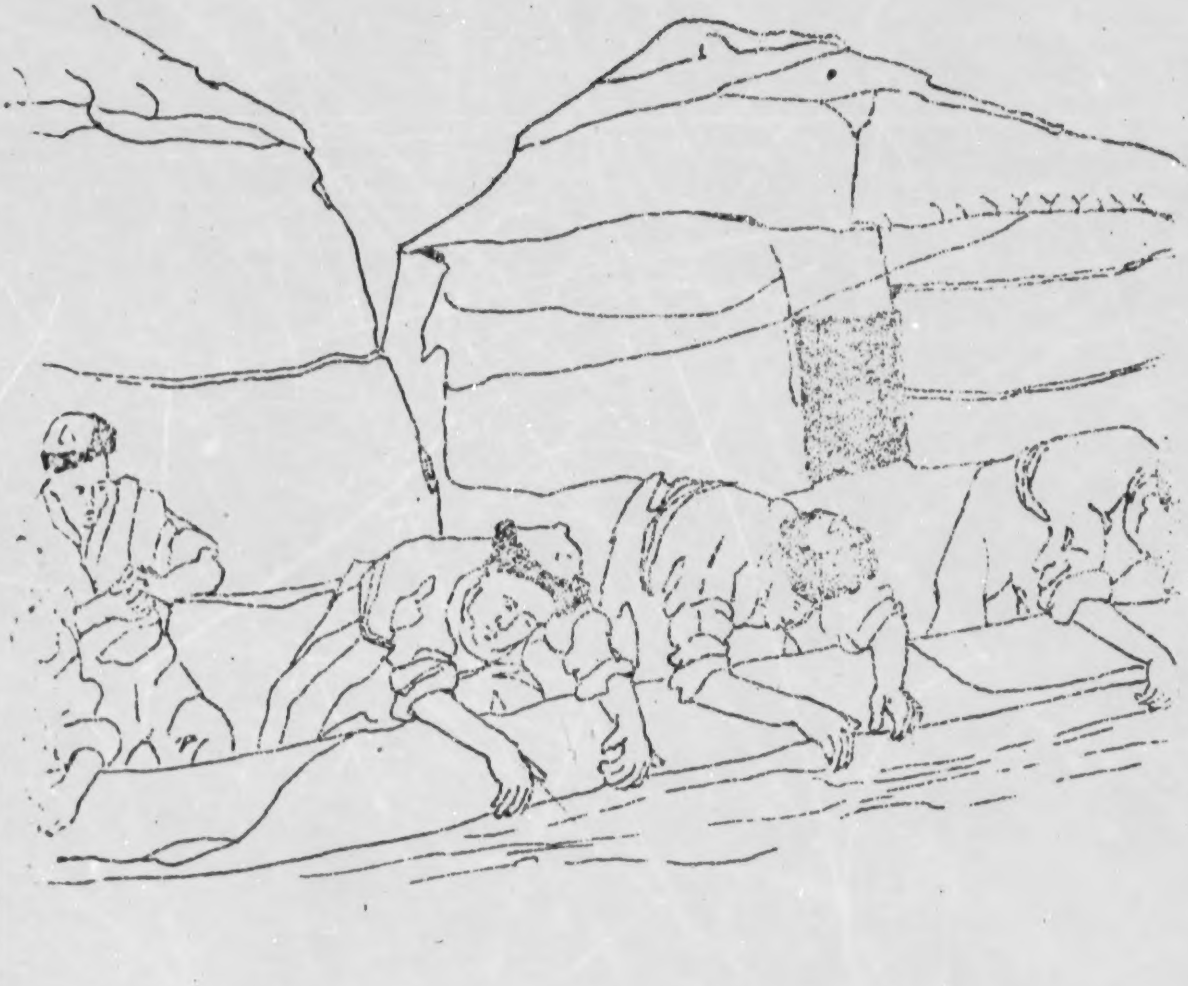
   ____

   e. What could you make last longer? ______________________

   ____

   f. What could you combine with something else to make that something better? ______________________





Exercise 7

Name ____________________

WORKING TOGETHER

1. The men who are shown on the previous page are cooperating in making felt. The Kazak use the wool from their sheep to make felt. Felt is a thick, warm material made by pressing the wool fibers together without spinning or weaving. The wool is dampened and the fibers are placed between two straw mats and rolled up like a carpet. The roll is tightly tied. The felt-makers divide into two groups and sit facing each other. The rolled-up mat is placed between them, and they push it back and forth with their feet. This packs the wool closely together, making the felt. Do you think one man could do the job by himself? _____ Why or why not? ____________________

____

What if two or three of the Kazak men became angry with one another--would they still cooperate in getting their job done? ______ What are your reasons for answering as you do? ____________________

____

____

. It should prove to be quite interesting to you to make a survey of the different ways that your classmates cooperate with one another in the classroom and on the playground. Why don't you keep track of all the instances of pupils and adults working together at school. You might also include instances of cooperation in your home. Here is a chart you can fill out:

Activity	Location	Could the Activity Be Carried Out Without Cooperation?

3. It might be fun for you to quiz someone else about what you have learned in this booklet and in your other booklets about culture. Why don't you make up a little test to give to your classmates? Review the main ideas that have been dealt with in your study of the Kazak people. Then think of questions that will test whether your classmates have learned these important ideas and facts. You can use the space below for working on your quiz.

You might present some of your test items in the form of pictures. In this way, the people who take your test will have to interpret the pictures and this may make it a better test.

Exercise 8 Name ____________________

TALK

1. On the next page, the Kazak are pictured inside a yurt. They are sitting on felt mats on the floor. Pillows and rolls of felt are placed against the wall of the yurt. These are spread out at night for sleeping. The wooden framework of the yurt is held together by woven straps made of sheep wool. These people might be having a conversation while they are eating or drinking. (Maybe the man with his back to us is doing the talking.) Talking is probably the main pastime of people everywhere. A number of people have said that Americans won't know how to converse in an intelligent way before long because our children spend so much time in front of television sets. What do they mean? ____________________

____

Do you agree with this idea? _____ Explain. ____________________

____

____

2. There are certain drugs which cause people to be "loose-tongued." These drugs are sometimes given to people who are unaware that they have taken them. Then they say things that they might not have said if they had not been given the drug. What do you think can be done to prevent people from giving drugs to others who are unaware of what is happening? __________

____

____

Let's reverse the process. What would be the advantages and disadvantages of giving "silence pills" to people? ____________________

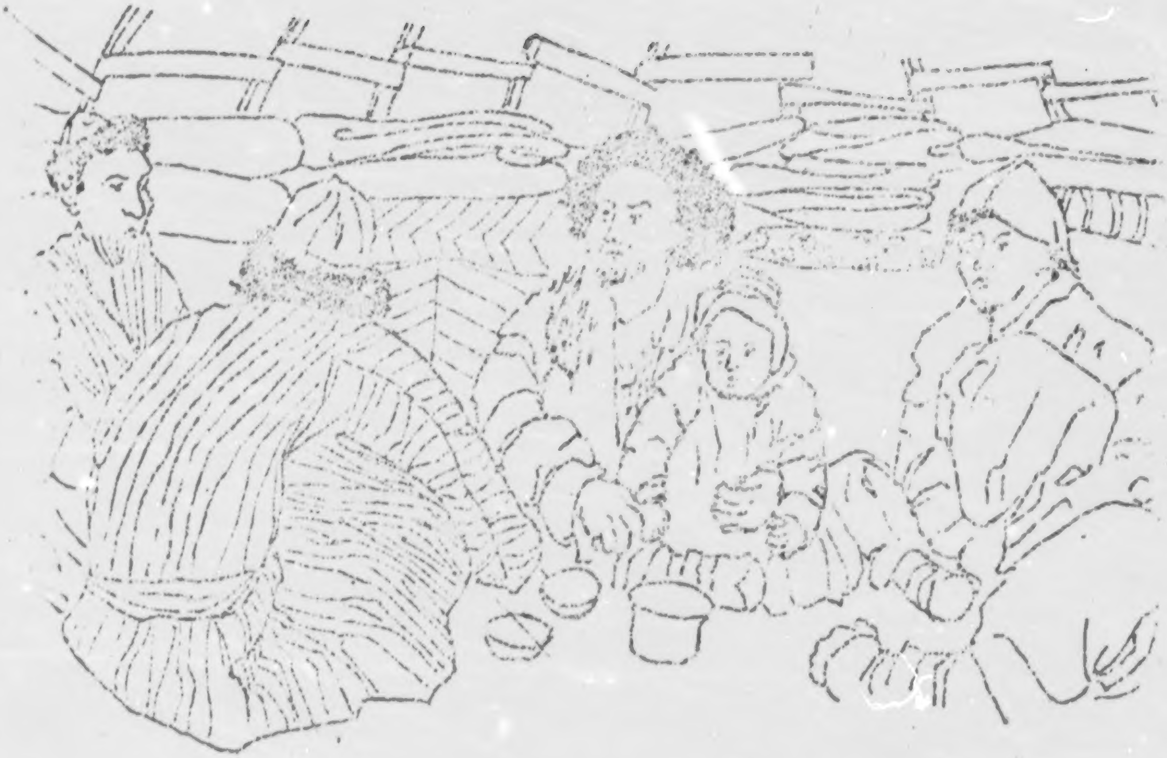
____

____

When do you do most of your talking? ____________________

When do you think a Kazak child does most of his talking? __________

____



Exercise 9

Name ______________

RIDES

1. The boy is riding a yak in the illustration on the following page. Do you think he would rather ride a horse? _____ Why or why not? ______________

____

Have you ever wishedthat you could ride a horse? _____ When did you last wish you could be riding a horse? ______________

What other things have you wanted to ride? ______________

____

Do you think the Kazak boy ever wishes he could ride a surfboard? _____

Why or why not? ______________

Do you think he ever wishes he could ride a merry-go-round or a roller coaster? _____ Why or why not? ______________

____

Would you trade a ride on his yak for a ride on your bicycle? (If you don't have a bike, subtitute something else.) ______________

Which of you would be more frightened? ______________

2. Besides riding a yak, what else could the Kazak boy ride? ______________

____

Make a list of all the things you can ride.

____

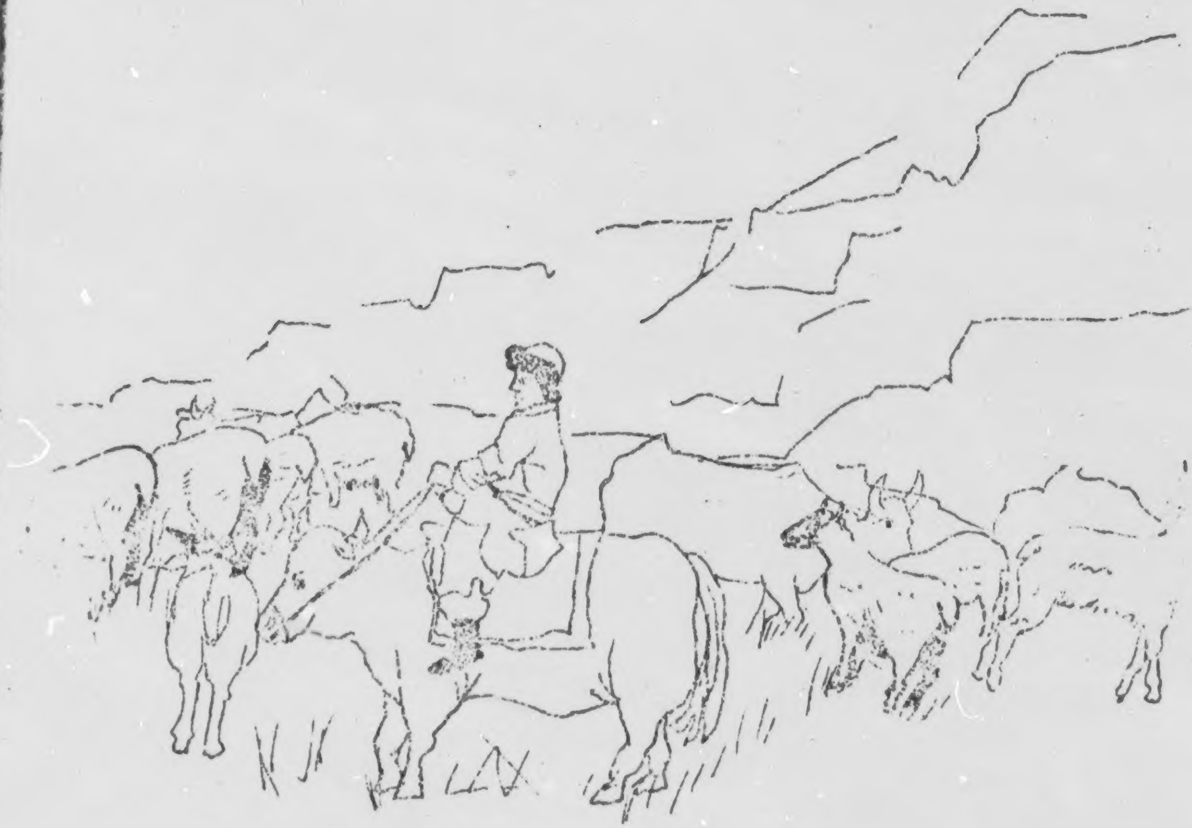
____

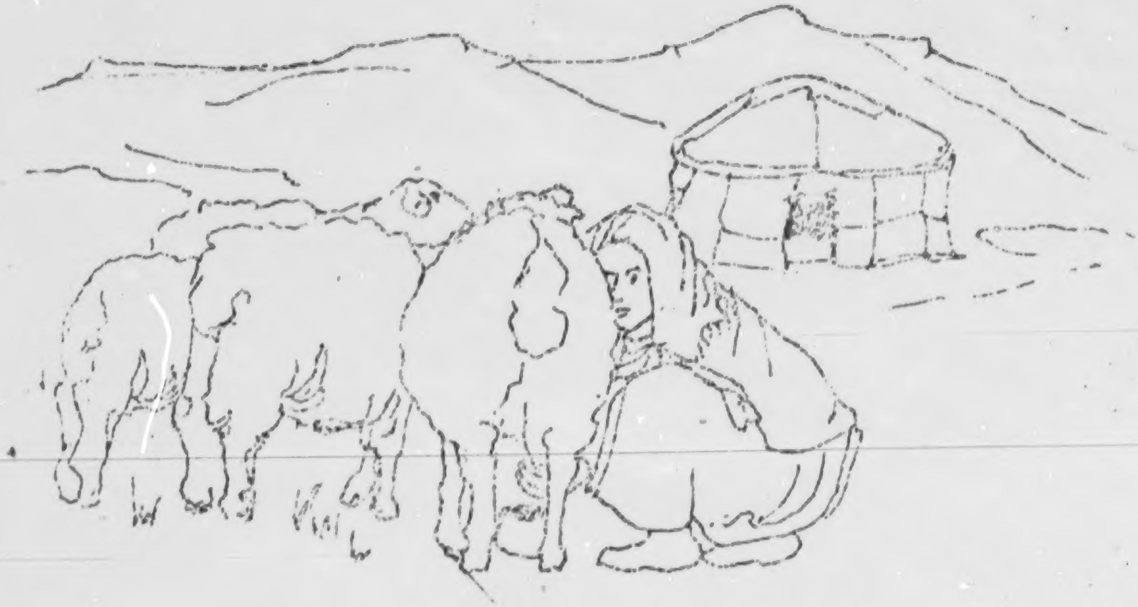
____

____

____

The Kazak boy, of course, isn't riding the yak just for fun. He has a job to do. Sheep herding is done by the boys. Horses are too valuable to use in sheep herding, so the shepherd usually rides an ox or yak. The Kazak keep small numbers of goats with their herds of sheep. They believe the goats protect the flocks from attacks of wild animals. They also keep a few cows for milk.





Exercise 10

Name ______________________

DIVIDING UP THE WORK

1. On the previous page there is an illustration of a Kazak woman milking some sheep. The sheep are driven in from pasture twice a day and milked by the Kazak women. As we have learned by reading about the Kazak and studying the illustrations, certain tasks are performed by women and others are performed by men and boys. What jobs are performed by men?

____

____

What jobs are done by women? ________________________________

____

____

What do the boys do? _____________________________________

Can you guess how the girls help out? ________________________

____

What other important jobs must be done? _______________________

____

____

2. Look again at the illustration of the woman milking the sheep. What kind of dwelling is that in the background? ____________________

How can you be sure? ______________________________________

3. When you build a tree house or a fort with your friends, do you and your friends take different jobs or do you all work on the same task together?

____

If you have never built a fort or clubhouse of any kind, maybe you have given a party with some friends. Did all of you work on the decorations, then on the refreshments or the entertainment? Or did you take different jobs and carry them out more or less by yourself. If you each had a different job, you had a division of labor, just as the Kazak do when the men, women, and children have different jobs to perform.

Exercise 11

Name ____________

THE HORSE HERDERS

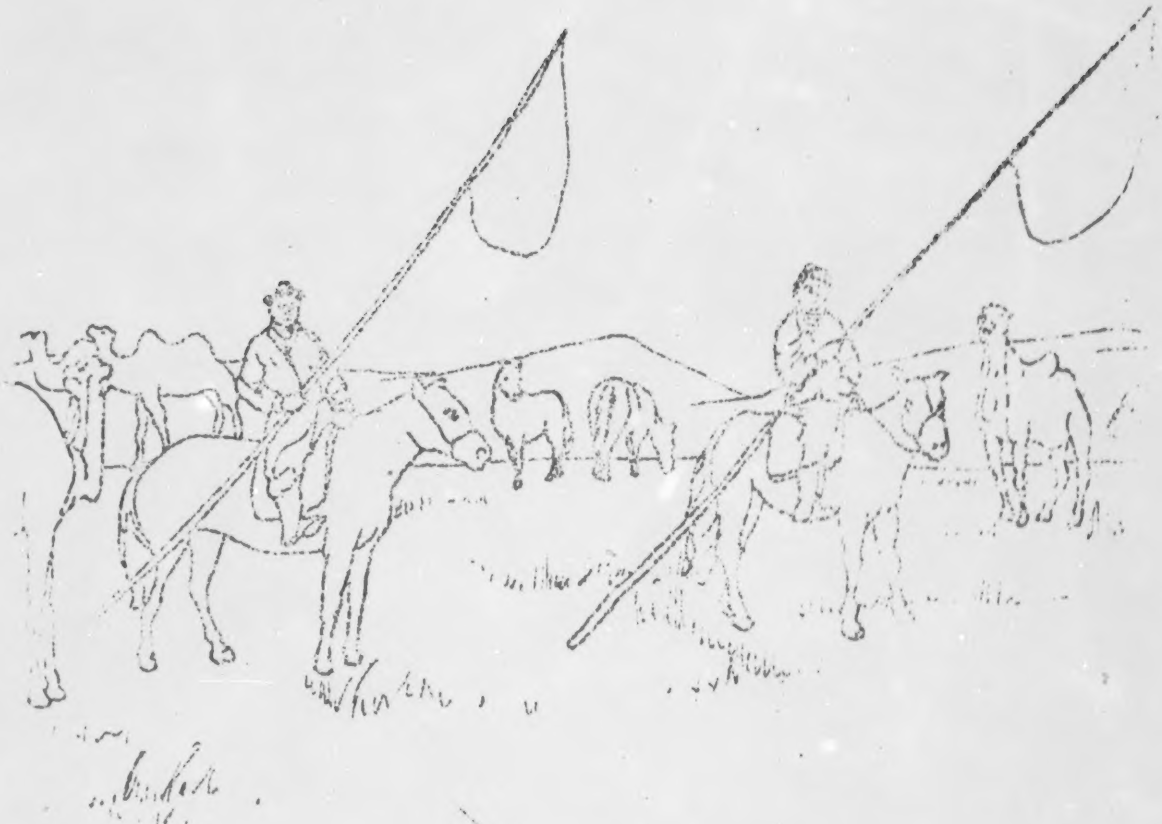
1. As was mentioned earlier, the Kazak have horses, yak, sheep, and cows. They also have camels. The young men in the picture on the following page tend the horse herds, which are kept separate from the sheep. The horses are small, not much larger than Shetland ponies. The horse herders use long poles with rope loops on the ends for catching horses. In the southern part of the country, the Kazak keep a number of camels with their herds. Camels can carry greater loads than the horses. Why don't the men who round up horses in our country use a long pole with a loop at the end? ____________

What other uses can you think of for the pole with the loop? Name as many as you can, not only for the Kazak but for anyone's use.

Have you ever ridden a Shetland pony? _____ Where was the breed developed?

What advantages does the small horse or pony have over a big horse?

What are the advantages of owning a larger horse? ____________



Exercise 12

Name ____________________

ON THE MOVE

1. On the next page you can see an illustration showing how the Kazak move from place to place. Household goods are packed on the backs of the horses or yaks. When the Kazak move from camp to camp, the yurt is taken down very much like a tent. The felt is rolled up, the sticks are bundled together, and these are packed on the animals. Sometimes the Kazak only stay a few days in one place. People who move often are called nomadic people. In Africa, Asia, and southwestern United States these people often travel with their herds of animals, and they move in order that the animals have enough food. Grass and other plants make up most of the food for the animals, and when it is eaten up or when the weather changes these nomadic people must move.

2. People move for other reasons, too, as you know. In fact, Americans are moving more often now than ever before. The average American family moves so often that there are organizations in most cities to help people get acquainted in their new surroundings. How often does the average American family move, do you think? __________ How could you find out for sure?

____

When was the last time your family moved? ____________________

3. The Kazak move because they must find enough grass for their animals to graze upon. What are some of the reasons why people in our country move?

____

____

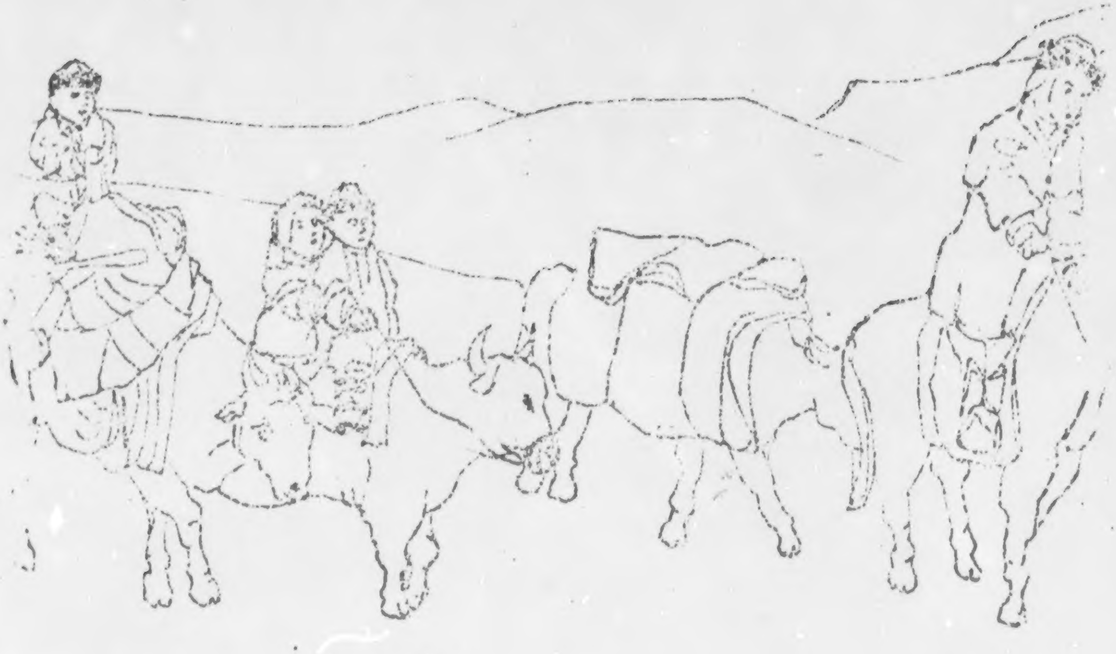
____

____

Which of these reasons is most important to you? ______________

Why? ____

____



Exercise 13 Name ______________________

A PARADOX

1. The illustration on the next page shows a Kazak household in its summer camp. During the summer months the Kazak household may move every few days. They move into the open mountain pastures in search of grass for feeding their animals. Who, do you suppose, makes the decision as to when the household moves? ______________________________

   It is a serious responsibility for someone to decide when the household should move because if the move is poorly timed some of the animals may die. As you know, the Kazak depend upon their animals for their livelihood.

2. Most children want to be the captain of a team or the one who decides which game will be played. When people tell others what to do and how to do it, we call them leaders. Why do boys and girls want to be leaders?

   ____

   ____

   ____

   Are these the same reasons why adults want to be in positions of leadership? ______ Explain. ______________________________

   ____

   What other reasons do adults have for wanting to lead other people?

   ____

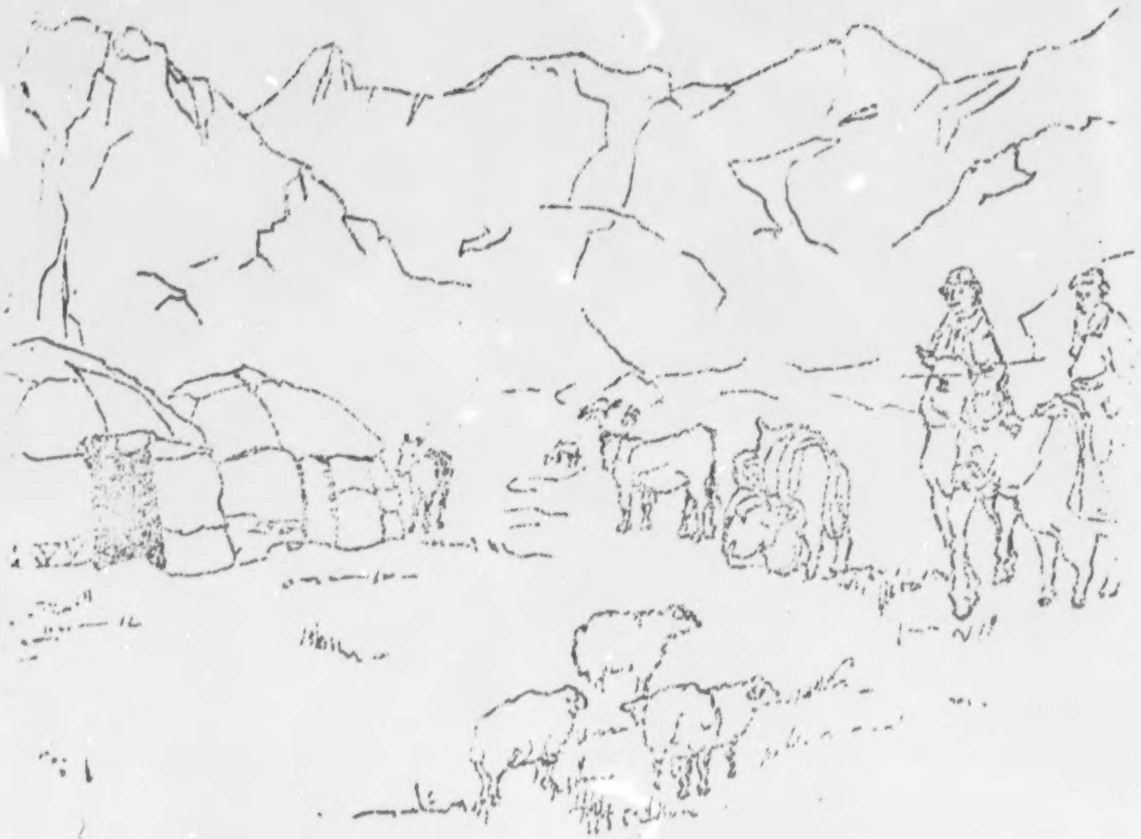
   ____

   Can you do whatever you want to do when you are a captain or a chairman or a president? _____ Are the people the leader is supposed to lead freer to do what they want to do than he or she is? _____ If so, in what ways are they freer than the leader? ______________________________

   ____

What is a paradox? ______________________________

____



Exercise 14 Name ____________________

ONE MAN'S FAMILY

1. The family pictured on the next page is a typical Kazak family. The Kazak extended family is made up of the father, mother, children, grandparents, uncles, and aunts. Do you know of any families that are similar to this one? _____ If so, describe it. ______________________________

____

____

2. Since you know something about how the Kazak live, why don't you make up a little story about this family or some of its members? You can use the information in the Pupil Study Guide if you need more information about the Kazak. Be sure to give your story a title.

____

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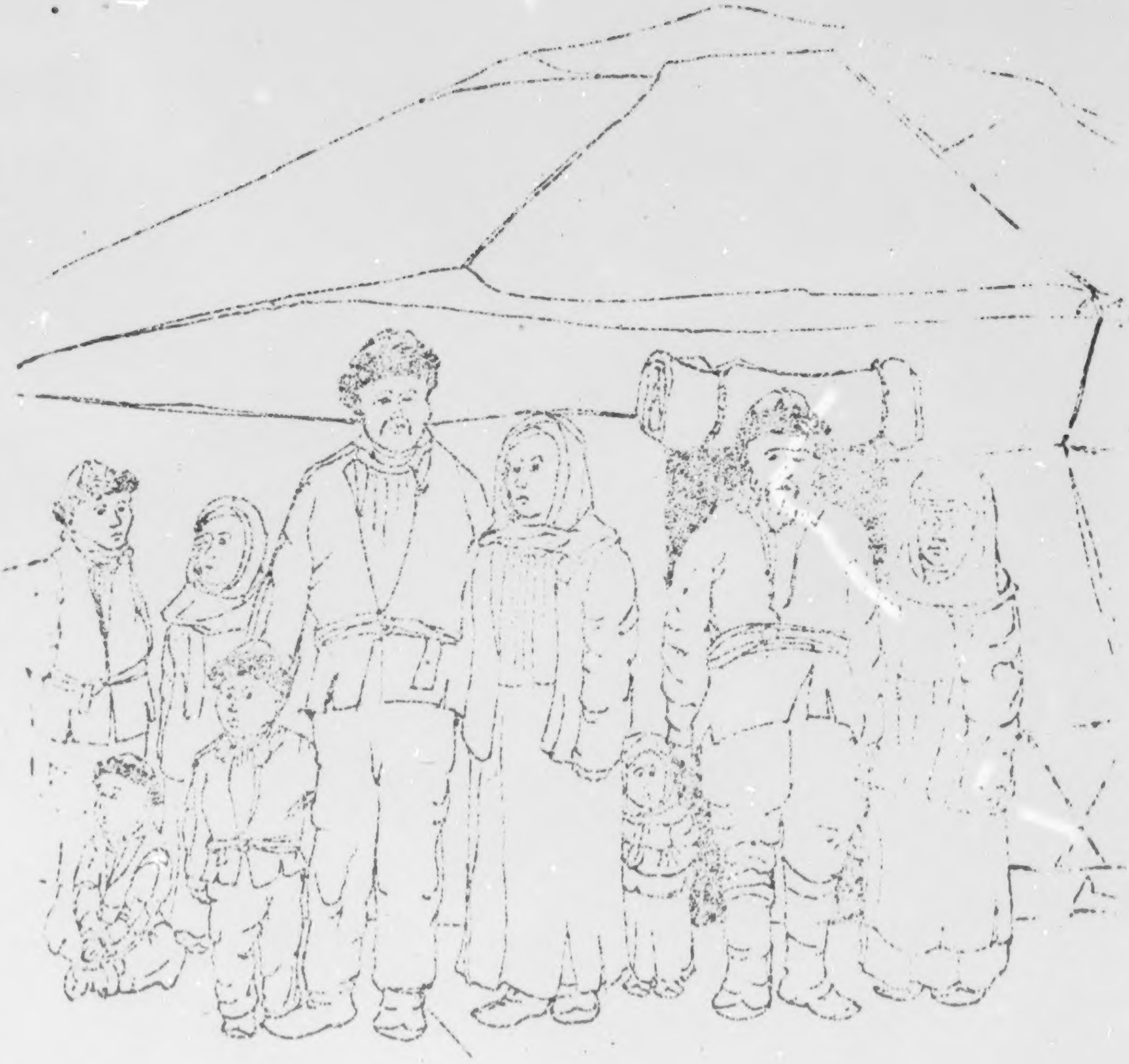


Exercise 15 Name ____________________

RED AND WHITE

1. The woman pictured on the next page was recently married. This Kazak bride wears a red scarf or shawl until the birth of her first child. Then she wears the white headdress worn by the other Kazak wives and mothers for the rest of her life. She is pouring mare's milk from a coltskin flask. Clothing, ornaments, and decorations are used by several other groups of people in various parts of the world to distinguish unmarried girls, wives without children, and mothers. Do we have anything like this system for identifying women who are mothers? Do we have any custom for identifying married women? _____ What is it? ______________________________

____

____

2. Did you notice that the woman in the picture is using two animal products? What are they? ____

What other animal products do the Kazak use? _____________________

____

____

____

Do you think the Kazak use animal products more than they use vegetable products? _____ If you think so, what reasons can you give for the greater use of animal products? _________________________________

____

____

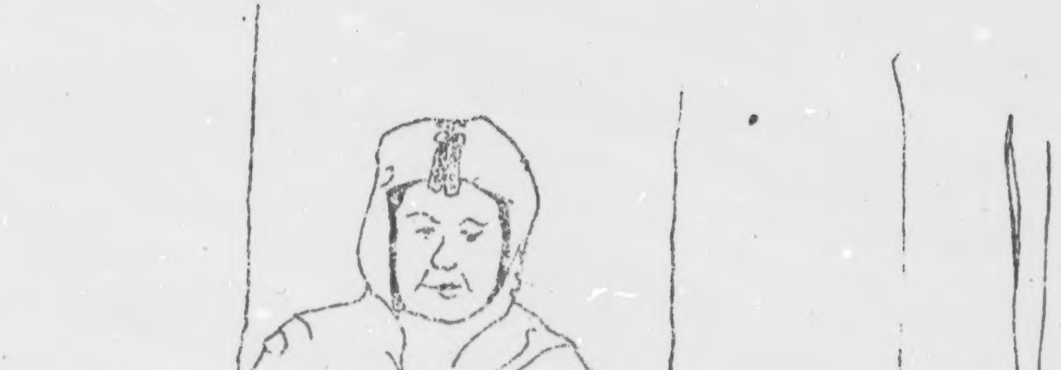
____

Instead of a coltskin flask, what would your mother use to pour milk from? _______________ Where would she get this utensil? ______________

____

Where would the Kazak woman get hers? ____________________________

____



Exercise 16   Name ____________________

LOOKING UP

1. On the next page you can see a Kazak man at prayer. A Kazak who recites daily prayers kneels facing in the direction of the holy city of Mecca. He may say prayers five times a day, according to the faith of Islam.

2. Do you think the Kazak adults have any trouble getting their children to perform their religious devotions? _____ Why or why not? ______________

____

____

3. Do adults tell you what to do very often? _____ Do you get a lot of advice from them? _____ Do you think Kazak children get more advice from adults than you do? _____ Why or why not? ______________________________

____

____

What kind of advice do you think they get about playing? ______________

____

____

What kind of advice do you think they get about working? ______________

____

____

What kind of advice do you think they get about eating? ______________

____

____

What do you think the adults tell the children about sleeping? __________

____

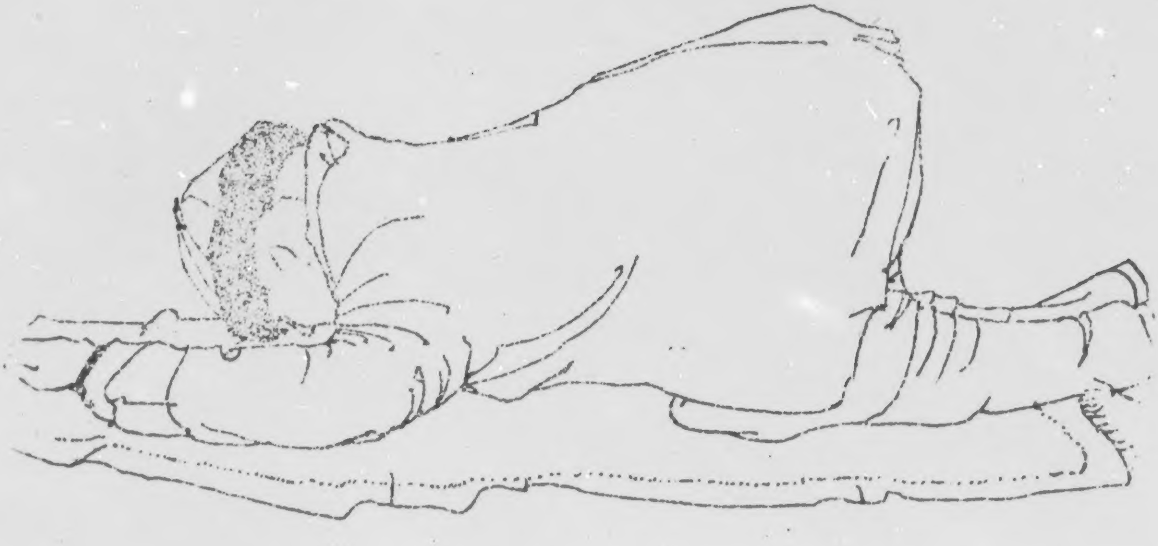
What do you think the adults tell the children about waste? ____________

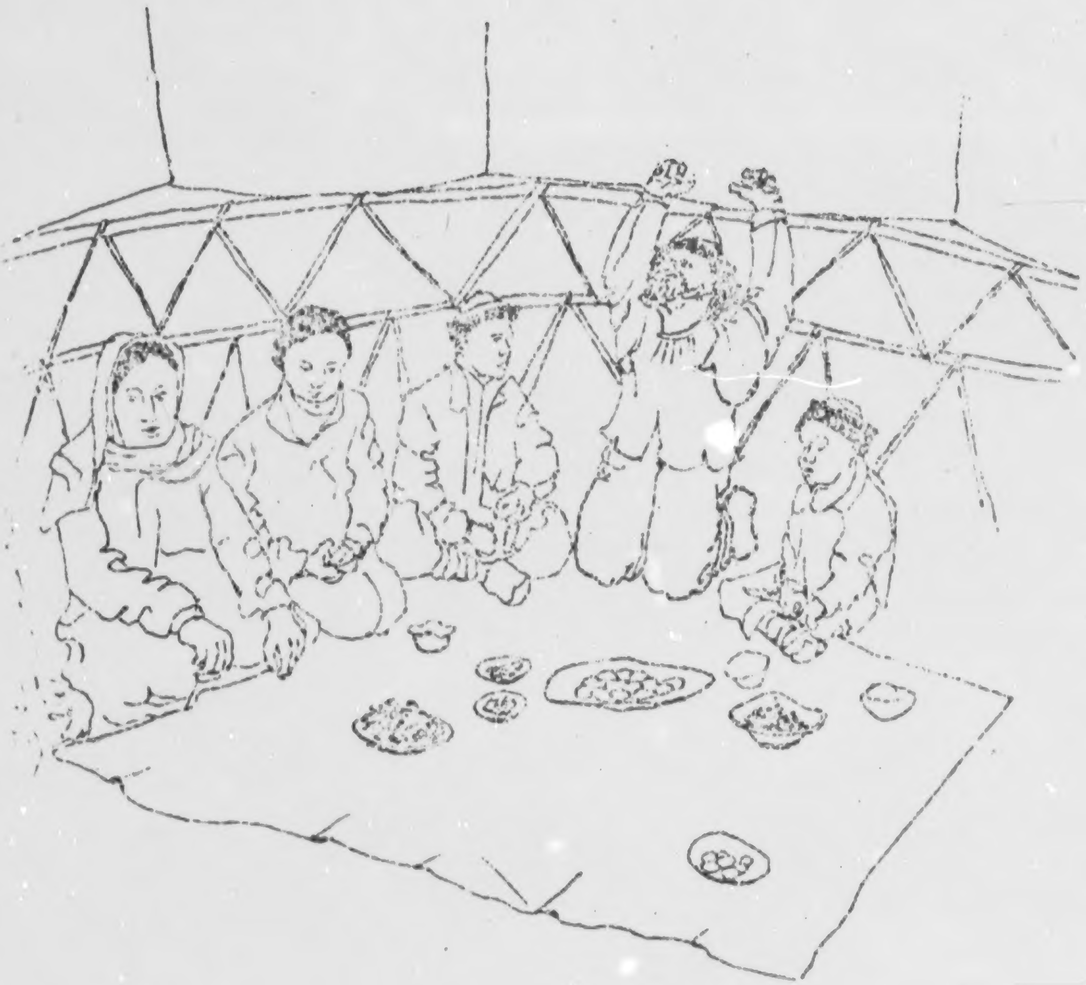
____

____

What do you think they say about learning? ______________________

____





ercise 17

Name ______________________

K - A - Z - A - K

1. The picture of the Kazak family sitting down to a meal probably does not remind you of the last time your family had company for dinner. It might remind you of some other kind of meal that is quite popular with Americans, though. What is that special kind of occasion called? ______________________

The Kazak eat their meals sitting on mats on the floor. They say a short prayer or grace before eating a meal. Stretching their arms upward, they pray, "Allah is good; we thank Thee." Your family may say grace before meals also.

2. To finish up our study of the Kazak, why don't we play a little word game? It goes like this. You take a word--let's take the word Kazak itself--and put it in a column like this:

K

A

Z

A

K

(Did you notice before that Kazak spells the same forward or backward, uphill or downhill?) The trick is to fill in letters to the right of the first letter to make words. Since Kazak is quite difficult, why don't we use "nomad"? Fill in letters that will make words that you have learned in studying about the Kazak. If you get stuck, you can refer to this booklet, the Pupil Study Guide, the Pupil Text, or any other material to find words that begin with N, O, M, A, and D. Just for fun, see how long it takes you to come up with the five words.

N

O

M

A

D

APPENDIX C

TEACHER'S GUIDE FOR THE PUPIL BOOKLETS

TEACHERS' GUIDE FOR
THE KAZAK AND THE ARUNTA

Grades 1 and 4

The Concept of Culture

R. E. Myers

Anthropology Curriculum Project
University of Georgia
Athens, Georgia
February 1968

FOREWORD

The principle of learning that we hope to utilize throughout this unit of study is that children will best learn the unfamiliar by means of the familiar. Putting it another way, they must learn to understand themselves before they can understand other people. This goal is an ambitious one, obviously, because most of us spend our lives trying to understand ourselves. However, we hope your pupils can relate what they know about themselves and their own world to the worlds of two groups of people that are quite unlike Americans outwardly.

Only one guide has been prepared for the first and fourth grade teachers who are doing the initial testing of these exercises. The orientation in all of the exercises is one that emphasizes involvement on the part of the pupil. Since both first grade teachers and fourth grade teachers generally try to involve their pupils in thinking about the subject matter that they are presented with, we hope that you will endorse the spirit of the exercises if not always their contents.

Inasmuch as there is usually quite a difference in the amount of writing and reading that first and fourth graders are able to do, we shall try to offer suggestions for pupils at both grade levels in each section of the guide. We emphasize that these are only suggestions, just as the exercises themselves are only suggestive. The most important point to remember is that, although you as an experimental teacher are expected to teach inductively (or at least to encourage discovery and self-initiated learning), you are to teach in a manner that is congenial to your abilities and beliefs. If you find that you are unable to teach the materials inductively, you need not despair. Simply write to me and say so. We can then take into account your difficulties in evaluating the results of the experiment, and you can go ahead and do what you wish with the Anthropology Curriculum Project's materials -- with a clear conscience.

R. E. Myers
Fain Hall
University of Georgia
Athens, Ga. 30601

TO THE FIRST-GRADE TEACHER

The exercises that comprise the two pupil booklets dealing with the Arunta and the Kazak were intended as activities for discussion, research, and writing for fourth-graders. Except for very advanced children, they would be inappropriate for first-graders in the form in which they are presented. Your pupils will receive the regular Anthropology Curriculum Project picture booklets. As an "experimental" teacher, however, you have received the two booklets of exercises and this guide for the purpose of encouraging you to use an "inductive" approach to the presentation of "The Concept of Culture" unit.

Since most primary-grade teachers employ many, if not all, of the techniques that are suggested in these experimental materials, we do not think that you will experience any difficulty in trying to incorporate them into your program. The emphasis in the materials is upon discovery and self-initiated learning. Pupils are encouraged to see relationships among facts, observations, and details and then to make generalizations. The generalizations mostly have to do with comparing their own lives with those of the two preliterate peoples. Again, this approach may very will be the one which you would take whether we had sent these materials to you or not. However, we are asking you to consciously direct your pupils into activities in which they emphathize, imagine, and hypothesize about the Arunta and the Kazak. We assume that when children engage in these activities they are undergoing educational experiences which are different in some respects from other equally legitimate activities that stress the learning of terms and the classification of phenomena. Obviously, both types of activities occur simultaneously quite often. The study is concerned with whether a focus upon one style of learning is more effective with children that the other style.

In the interests of our study, we request that you do not share these materials with "control" teachers. However, after the study is concluded and we have given you all the results of the experiment, we certainly hope that you do share your experiences with the control teachaers and any other interested persons.

Our sincerest thanks for your cooperation.

TO THE FOURTH-GRADE TEACHER

In making available these materials, we are attempting to provide an alternative method of teaching "The Concept of Culture" unit to first and fourth-grade pupils. Whereas the approach that has been presented -- and is continuing to be presented -- by the Anthropology Curriculum Project might be termed "deductive," the exercises that have been created for the purpose of this study are called "inductive." We realize that in actuality it is impossible for any teacher to teach exclusively in an inductive manner, however, and so we are not terribly concerned about the labels. On the other hand, the two approaches do differ.

As you look through the exercises in the two pupil booklets dealing with the Kazak and the Arunta, you will see that your pupils are encouraged to see relationships among facts, observations, and details and to form generalizations. Most often the generalizations will deal with the contrast in the way the children live and the way the preliterate peoples live. You can also see that we have suggested a number of activities in which your pupils will project themselves into the Kazak and Arunta societies. They will do a good deal of imagining, hypothesizing, and empathizing. We would like to emphasize that these activities be used in conjunction with the reading of the Pupil Text and the Pupil Study Guide.

You may find that your pupils are unable to complete the exercises and read the other materials in the allotted time of one hour per day. If this is the case, we have two recommendations. First, we suggest that the Pupil Texts and the Pupil Study Guide might be used as resource materials for the children as they complete the exercises. Our second recommendation is that you select only those exercises or portions of exercises which seem appropriate for your pupils. We should stress the fact that we only wish to restrict the amount of formal instruction. There is no way to curtail informal learning, nor would we wish to do so. Similarly, the teachers who are using a "deductive" approach will not restrict their children's learning to the formal lessons. In comparing the "inductive" approach and the "deductive" approach, we assume that when the exercises are conscientiously administered to a group of childdren they will approach their study of culture differently than do pupils who do not engage in the exercises. That is what this study is all about.

In the interests of our study, we request that you do not share these materials with "control" teachers. However, after the study is concluded and we have given you all the results of the experiment, we certainly hope that you do share your experiences with the control teachers and any other persons that might be interested in them.

Our sincerest thanks for your cooperation.

THE KAZAK

Exercise 1: WHERE THE HEART IS

Presenting the Exercise. Every one of the exercises in the two pupil booklets can be presented orally to some degree. We expect that most, if not all, of the first-grade teachers who use the booklets will make oral presentations of the materials or will modify parts of the materials so that they can be presented orally. Fourth-grade teachers may also discover that the exercises are often useful as starting points for open discussions.

Viewed in another light, the exercises can be construed as "creative programming," in which one thing is allowed to lead to another. The first exercise in the booklet about the Kazak, for instance, leads the pupil from thinking about the kinds of dwellings that people in various parts of the world inhabit to the factors that cause them to build their houses. This thinking might lead to still more thinking about such matters as architecture, climate, economics, and insulation. We hope that when the pupil becomes interested in any topic as a result of becoming involved in an exercise he will be permitted to pursue his line of thought and gain additional information.

Following Through With the Exercise. A number of activities might grow out of this exercise. You can undoubtedly think of many, but a few suggestive activities will be listed here in the hope that occasionally one may spark your thinking about how to promote your pupils understanding of the concepts and understandings of the unit. Most of the activities that do occur, however, will not be planned but will arise as a result of the pupils' interests.

- Construction of various kinds of dwellings (sticks, papier-mache, clay, etc.)

- Visit by an architect or resource person from a different culture.

- Painting or drawing of tents, lean-tos, brick houses, igloos, etc.

- Investigation into reference books regarding the climate, terrain, vegetation, etc. where the Northwest Territories Indians, Tahitians, Hopi, and Arizona cattle ranchers live.

Concepts and Terms. The word for the Kazak house, yurt, is presented in the exercise. The understanding that the kinds of dwellings people occupy is influenced by the climate in which they live, their technology, their personal wealth or style of life, the building materials available, and such important considerations as the possibility of hurricanes or typhoons infestation from animals and insects, and the physical surroundings of the dwellings.

Exercise 2: IN ALL SHAPES AND SIZES

Presenting the Exercise. This can be thought of as an exercise to encourage the pupil to be more sensitive to geometric shapes. Many primary and preschool teachers incorporate units dealing with the basic geometric shapes, and so your class might find this exercise either "old hat" or rather easy. The question dealing with the functional elements in architectural design, however, should be challenging to both fourth-graders and first-graders. More and more articles concerning the designing of buildings are being written for magazines and newspapers, and so this exercise may alert the pupil to the implications of one of these articles when he next encounters one.

You may prefer to have one or two of your pupils write on the chalkboard the names of the objects in the room and the buildings that they resemble, rather than to make this a written exercise. In the case of a primary-grade classroom, the geometric shape could be put on the chalkboard along with the name of the object.

Following Through With the Exercise. Among the activities which might grow out of the exercise are the following:

- Construction of a bulletin board dealing with geometric shapes and/or distinctive buildings.
- Visit by an architect to the class.
- Construction of mobiles of various geometric shapes.
- Close examination of the different shapes of objects at home.
- Presentation of reports on geometric figures, architectural geometry, odd shapes, etc.

Concepts and Terms. The new term presented in the exercise is yak, the "mountain ox." Yurt is used again in the exercise, and your pupils should be familiar with its meaning now. The main understanding of the exercise has to do with the fact that man creates things in certain patterns. Many of these patterns conform to general geometric shapes. The yurt that is illustrated on page 3 is similar to a number of constructions that the pupil should be familiar with, including the circus tent and the observatory.

Exercise 3: TWO OF A KIND?

Presenting the Exercise. First, the pupil is asked to compare the winter home of the Kazak with his summer home. Then he is asked to think about what a sod house is. Finally, he is invited to put himself in the position of a Kazak inside his house in the winter. Three questions are posed, and the pupil will find that, in answering them, the very nature of the Kazak winter house has several implications with regard to his social life and his safety.

Younger children may or may not benefit from the question concerning the unwelcome caller, but they will probably react openly to the other two questions. With regard to the first one -- whether a mild, wet stretch of weather would affect the sod house -- there might be quite a bit of debate among your pupils. They might recall the story of the Three Little Pigs when the third question is presented. You'll be interested in the reasons the children give for their confidence or lack of confidence in the sod house.

Following Through With the Exercise. This exercise could lead to a number of related activities for individual pupils or groups of pupils:

- Painting or drawing sod houses of the Kazak or other groups of people.
- Research into the construction and characteristics of sod houses.
- Experimentation with model sod houses.
- Discussion of the geographical and topographical features of the area where the Kazak live (in the Steppes).
- Dramatization of a winter episode in a Kazak home.

Concepts and Terms. Sod is the new term introduced in the exercise, and the pupil is asked to deal with its meaning by the question: "Do you know what sod is?" The understanding that is central in this exercise is that the Kazak have good reasons for building their houses as they do. The reasons have to do with available materials, weather conditions, style of living, social organization, and technology.

Exercise 4: A MAN AND HIS HORSE

Presenting the Exercise. The illustration on page 9 should inspire the pupil to think of a number of matters, from Genghis Khan and Pancho Villa to Black Beauty. As a result of the first few questions of the exercise which ask the pupil to speculate about the Kazak man astride the horse, a good discussion might be engendered regarding his personality and his position. Later on in the exercise, it is revealed that he is a clan chief and that the chief is usually the head of the largest and richest household in the clan. You might inquire of your pupils, if you have a discussion regarding this exercise, how they think the Kazak measure wealth.

The production of similes will facilitate the pupil's seeing relationships between elements in his own world and elements in the world of the Kazak. At the end of the exercise, the pupil is asked to name the signifiers of wealth and power in our country. Fourth-graders may be able to come up with more notions than first-graders as to how people show their wealth and power in our country, but the younger pupils very likely will produce a number of on-the-target responses.

Following Through With the Exercise. Perhaps the most promising indication that the exercise has been successful is an increasing awareness on the part of the pupil that people do have both obvious and subtle ways of asserting their dominance over others. One of the best known ways to them can be found in the way they are to address others. Words such as "sir," "ma'am," "missus," and "miss" should be cited by the children in a follow-up discussion of rank or status -- if they have not been mentioned in the discussion that is stimulated by the exercise when it is first given. (We have several titles in the field of education that I'm sure you could add to the children's list.

Among the activities that might follow this exercise are:

- Investigation of the ways in which horses and other animals are decorated and ornamented in various parts of the world.
- Writing similes and other figures of speech as language activities.
- Writing stories about men similar to the Kazak chief or about horses.
- Composing songs, jingles, limericks, and poems about the Kazak chief, powerful people, horses, and related subjects.

Concepts and Terms. Several words that are used in the exercise could be new to your pupils, including rank, bridle, clan, simile, and impression. The concepts which should be acquired are those of rank or position, clan, and power. Analogous situations and persons in our society can be used to convey the meanings of these terms. The principal understanding to be gained from the exercise is that people have means of showing their power and wealth; and it seems to be important to most people, regardless of their culture, that there be signifiers to make certain that ranks are recognized.

Exercise 5: WEAVING AND WORKING

Presenting the Exercise. This is about work. The illustration upon which the exercise is based shows a woman weaving a strap for a yurt. However, in trying to establish a relationship between what she is doing and something comparable that is done by the pupil, a number of questions are posed concerning the attitudes people have about work. The subject of chores may strike sparks in a number of your pupils. These feelings will probably show up in their reactions to the final two questions: "Which are your favorite jobs?" and "Which are your 'un-favorite' jobs?"

Following Through With the Exercise. Among the many activities that might result from an administration of this exercise are these:

- Discussions of chores, occupations, and responsibilities.
- Hand weaving.
- Composition of stories, poems, riddles, limericks, and songs dealing with various forms of work.
- Investigation of the textile industry in our country or others.
- Bringing a loom to class.

Concepts and Terms. The word weaving should not be strange to your pupils, but it is quite possible that all of your pupils will not have actually woven something by the time this exercise is administered. Accordingly, some of the mechanics should be explained to those youngsters who do not understand the process. The frame of the yurt is a term that may have little meaning to some children, especially first-graders. In cases where one or more children do not understand a term, it is wise to have other youngsters do the explaining. In this way, of course, you can determine whether the terms are really understood. The main idea of the exercise is that nearly everyone has some kind of responsibility. Usually we call this responsibility work, whether it is caring for a baby or studying at school. "Work," as a matter of fact, is a word that is getting to be heard more and more in the elementary school.

Exercise 6: TOO MUCH OR TOO LITTLE

Presenting the Exercise. This exercise might easily be construed as dealing with conservation. The exercise begins with a discussion of the senseless waste of animal life, and it ends with a series of questions challenging the pupil to think of ways to save a variety of items. There might just as well have been a discussion of the conservation of our forests, air, and water. In fact, all three topics are more serious and of more immediate concern than the preservation of wildlife. However, you can substitute any topic for the one which leads the pupil into thinking about how he can make better use of his teacher, his time, etc.; and you can substitute more appropriate questions if any of them do not seem relevant or meaningful to your pupils.

Following Through With the Exercise. There are a number of activities that might grow out of this exercise:

- Discussion of plants and animals which are particularly important to people (camel, llama, cattle, etc.).
- Investigation of tanning.
- Discussion and/or investigation of the problems of air pollution.
- Discussion and/or investigation of the problems of water pollution.
- Research concerning extinct animals.
- Campaigns designed to reduce waste involving the making of posters, meetings, the writing of letters, etc.

Concepts and Terms. Words such as extinct, extermination, and maguey may be new to your pupils. Expressions such as balance of nature and tragic destruction of wildlife may be vague to your pupils. The theme of this exercise is that man can be wasteful, and when he is tragedy can ensue. We are now in a period of crisis with regard to decisions that must be made regarding the ways we are poisoning ourselves. Your pupils are not too young to be made fully aware of the difficult position that most of the people in our country find themselves with respect to air and water pollution.

Exercise 7: WORKING TOGETHER

Presenting the Exercise. If your pupils have been experiencing some difficulty in working together happily and efficiently, perhaps this exercise will help them understand the importance of cooperation. The picture of the Kazak men joining in the common enterprise of making felt may not inspire your pupils to want to work together, but the questions of the exercise should encourage them to see that many times the only way that a task can be accomplished is through cooperative effort. The exercise's intent is clearly revealed by the invitation at the end for the pupil to look for examples of cooperation in school, on the playground, and at home and to record whether these activities could be carried out if there were no cooperation among people.

Following Through With the Exercise. A follow-up activity similar to the one that concludes the exercise might be engaged in a week or so after this exercise is administered. You might possibly find changes of attitude in some of your pupils as a consequence of their thinking aobut how much people are dependent upon one another. We need others for materials -- how much truer this is of Americans than of the Kazak -- and we need others for the entire range of psychological needs.

Among the activities that also might result from the administration of this exercise are:

- Composition of stories, poems, limericks, and songs concerning cooperation.
- Construction of posters regarding cooperation.
- Investigation of the manufacture of felt (and woolen products).
- Dramatization of stories concerning the cooperation or the lack of cooperation among people.

Concepts and Terms. The term wool fibers might be discussed by you and your pupils. In the first grade especially, young people may not understand clearly just where wool comes from. The main understanding for your pupils to gain from the exercise is that nearly everyone in the world is dependent upon others. (Few true hermits exist.) The more people cooperate, the better off they are. And the happier they are.

Exercise 8: TALK

Presenting the Exercise. Your pupils may be very much aware of the importance of communicating orally. Some of them, in fact, may be finding it difficult to know when to talk and when not to talk. One of the paradoxes of American education (and probably all other varieties of formal education) is that we work very hard to get the child to express himself, and then when he begins to become proficient at oral self-expression, we work equally hard to inhibit his urge to talk to others. (Usually talking to the teacher is more acceptable but less satisfying than talking to his peers; however, there is generally only one teacher, whereas there are from twenty to forty other children.)

One of the major ways in which culture is transmitted is through speech. For young children, it is undoubtedly the principal mode of enculturation. The significance of speech to a nonliterate people can be pointed out to your pupils.

Following Through with the Exercise. Among the activities that might be engendered by this exercise are the following:

- Investigation and/or discussion of the legal and moral implications of administering "truth serums" and similar drugs.
- Invention of a game such as "The Wave of Silence."
- Investigation of the speech apparatus of human beings.
- Investigation of the customs of Kazak social gatherings. (Do women join men in all of their social gatherings?)

Concepts and Terms. There seem to be no new vocabulary words in the exercise. The theme of the exercise is that speech is precious to us. It is terribly important to the Kazak as well as to people in America and Europe. The idea that one's words can be used by others to one's detriment is also proposed. If your pupils engage in a discussion about a person's words being used against him, topics such as listening devices ("bugs") and the Fifth Amendment might be raised.

Exercise 9: RIDES

Presenting the Exercise. This exercise might particularly appeal to first-grade pupils. Rides are quite popular with children in all of the elementary grades, but first-graders are especially interested in them. The idea behind the exercise is that the Kazak boy on his yak is different from the pupil in a number of important respects. The pupil will probably have a somewhat better appreciation of the difference in his way of life from that of the Kazak boy after answering the questions as to whether the Kazak boy ever wishes to ride a surfboard or merry-go-round. A device as commonplace as a merry-go-round is to the average American child would be marvelously strange to a Kazak youngster. On the other hand, riding a yak might be either delightful or frightening to an American child, depending upon his background. Perhaps this is one of the important ideas that should be communicated to our pupils--namely, that although Americans are becoming more and more alike there is tremendous diversity among people in the United States. The Kazak are particularly interesting because they are still relatively homogeneous and "pure."

Following Through with the Exercise. Among the activities that might result from this exercise are these:

- Construction of a bulletin featuring "rides" or animals.
- Composition of stories about adventures with animals.
- Discussions of experiences with horses, cattle, etc.
- Construction of a composite picture featuring an animal or a ride of some kind.

Concepts and Terms. With certain groups of first-grade children, the word substitute might be clarified, but most children in elementary school are quite familiar with the concept. The very important generalization to be made from the exercise is that while children of other lands are very different from children of our country they are also very much alike. Kazak children have an entirely different way of life, but they face up to responsibilities and they delight in favored activities just as children everywhere do. The Kazak boy is very different, but he is still a boy.

Exercise 10: DIVIDING UP THE WORK

Presenting the Exercise. In this exercise, the concept of a division of labor is presented in a straightforward manner. The pupil is asked to recall the jobs that Kazak men, women, and boys perform. He is also asked to guess what jobs might be assigned to the Kazak girls. The exercise concludes with a question concerning how cooperative ventures such as the building of forts and the throwing of parties are carried out in the pupil's community. Presumably, the pupil can see that when there is a division of labor the project can be completed more expeditiously. There are exceptions to this generalization, of course, but if the pupil can see that assigning different tasks to different members of a group is the same in the Steppes as it is in his hometown he will have gained an important insight.

Following Through with the Exercise. Those activities that might spring from this exercise are:

- Discussion of the contrasting roles of children in our society and Kazak children.
- Dramatization of individuals working in a system where there is no division of labor.
- Discussion of the amount of information taken in by the senses but not utilized (growing out of the question concerning the house in the background of the illustration).

Concepts and Terms. As stated above, the principal concept of the exercise is division of labor. No new terms are presented.

Exercise 11: THE HORSE HERDERS

Presenting the Exercise. This exercise also might have special appeal for first-grade children. They will probably be impressed with the strange instrument in the hands of the Kazak "cowboys." The poles with rope loops look like good devices for catching horses, and so the pupil is asked why this method of catching horses is not used in our country. One possible explanation, aside from the fact that there is little or no cultural diffusion between Americans and the Kazak, is that their horses are much smaller than ours. Does that mean that they are slower or less agile? Your class may be interested in exploring this question. The exercise also invites the pupil to list as many uses as he can think of for the pole-with-a-loop. Although he may have no practical way of learning if he is correct, the pupil may come up with uses that the Kazak actually do employ--and he may think of some that the Kazak should employ.

It is possible that one or more of your pupils will notice that the horses as illustrated do not seem to be very small as compared with the men. There are at least two possible explanations. First, the illustrator was not careful in representing the comparative sizes of the animals and men. Second, the men are quite small, just as the horses are. Maybe your pupils can think of more reasons yet for this apparent inconsistency.

Following Through with the Exercise. Among the activities which might grow out of the administration of this exercise are these:

- Research into the origin of the Shetland pony.
- Discussion of the relative merits of various kinds of horses.
- Construction of a bulletin board featuring horses and/or cowboys.

Concepts and Terms. It is just possible that one or more of your pupils are not familiar with the Shetland pony. If this is the case, a description of the horse can be given and reference books can be consulted. The main idea of the exercise is that there are different ways of accomplishing the same objective. A lasso may seem like a much more flexible and efficient device for snaring a horse to an American cowboy, but the job is probably performed just as effectively by the Kazak with his pole. A related generalization is that bigness and smallness are both advantageous and disadvantageous at times. This is an important idea for growing boys and girls who are often concerned about being too big or too small.

Exercise 12: ON THE MOVE

Presenting the Exercise. This exercise sets up another means for the pupil to understand something of the forces that determine a way of life for his family and him. The topic is mobility. The Kazak must move continually because they are a nomadic people who depend upon grazing animals for their livelihood. Americans do not move as frequently as do the Kazak, but we do move a lot. Why? Many informed people have offered a number of plausible explanations, but we are interested in the reasons offered by the children in your class. If his family has moved several times during the past four or five years, is he aware of the forces that have caused these uprootings?

The question concerning how we find out how often the "average American" moves is inserted to give fourth-grade teachers an opportunity to introduce some procedures for investigating topics and obtaining data. There are several routes to get to the sources of information concerning the average length of time between moves made by the average American family. In learning how to obtain the information, the pupil is acquiring knowledge that is far more valuable than the data itself. First-grade teachers might also wish to discuss ways of obtaining information with their pupils. Many primary teachers have demonstrated that it is not really "rushing the season" to have six- and seven-year olds learn the rudements of research.

Following Through with the Exercise. These are some of the activities which might grow out of the experiences your pupils have had with the exercise:

- Taking a survey of children in the classroom to determine the average number of intercity moves made by the pupils during their lifetimes.
- Composition of stories, poems, songs, and plays concerning the moves of people.
- Placing pins on a map to indicate where the members of the class have lived.

Concepts and Terms. The word nomadic is used in the exercise to describe people who move frequently. As indicated above, the principal generalization which might be formed by the pupil is that Americans are "on the move," even though the great majority aren't nomads. We move to new places to get better jobs, escape prejudice, to find new friends, to climb up the social ladder, to find healthier surroundings, to have our children attend better schools, and for a host of other reasons. Like the Kazak, we are a mobile people.

Exercise 13: A PARADOX

Presenting the Exercise. The Kazak move frequently in the summer, and we assume that the head of the household precipitates the moves even though elements such as the condition of the grass and the weather are the primary causes. Whenever people join together, someone is likely to emerge as a leader. His leadership may be supported by other leaders, but we can assume that a pattern will develop in which some individual or individuals influence others more than they are influenced. The pupil is asked why children aspire to become leaders. Almost all children have a good idea of what power is, and their ideas of prestige and status are fairly well developed even in the first grade. Accordingly, the answers given to the questions in this exercises should be both enlightening and forthright. The paradox referred to in the title has to do with the fact that leaders seem to be freer than those they lead because they make decisions, whereas their responsibilities and the demands of their position make them much less free than their followers with respect to the number of factors they must consider in making decisions and in the amount of free time that they have. Depending upon the age and level of maturity of your class, this exercise could very well be too advanced with regard to the paradox. It should be suitable, however, as a means of getting your pupils to think about the social organization of the Kazak.

Following Through with the Exercise. After the exercise has been administered and the children have given some thought to the role of theleader, there should be a number of occasions in the classroom and on the playground when the factors raised in the lesson are brought to mind.

Concepts and Terms. With the exception of "positions of leadership," there are few words in the exercise that should present any difficulties to first-graders. The main idea of the exercise is that with leadership comes responsibility. Perhaps your pupils have already learned something about the tribulations of the leader when they have served as captains, chairmen, and presidents. Some people prefer to pursue a doggedly independent course in life, but the price they pay is not being able to achieve the satisfactions that come with helping others.

Exercise 14: ONE MAN'S FAMILY

Presenting the Exercise. This exercise consists of a suggestion that the Kazak family that is illustrated on page 31 may vaguely resemble a family that is known by the pupil and then an invitation to write a story about the Kazak family. Not all of your pupils will be enthusiastic about this assignment, perhaps, but by introducing it as an adventure in using their imaginations you can motivate most of your pupils to spin a good yarn.

Following Through with the Exercise. After the stories have been told or written, they can be presented as plays. If there are several successful stories produced, perhaps two or three can be presented to other classes. If your room has a newspaper, or if the school has a newspaper, the stories can be submitted to the editors.

Concepts and Terms. This exercise is designed to cause your pupils to think a little more deeply about the way the Kazak live. In order to tell or to write their stories, they will have to empathize with the Kazak. This, admittedly, is difficult for children who have not lived very long; but in many ways they are better equipped for it than their elders who have picked up many preconceptions about other people during their lifetimes.

Exercise 15: RED AND WHITE

Presenting the Exercise. This exercise may appeal more to the girls in your class than to the boys. Since it is about brides and dress, the boys may want very little to do with it. However, the idea that people differentiate amongst one another with respect to important classifications such as marriage and motherhood should be of general interest. The significance of the exercise lies in the question: "Do we have any custom for identifying married women?" In polyglot America there are many, but the custom of wearing rings is the most common. By making this observation, your pupils should get the feeling that perhaps the Kazak are not so terribly strange after all, that they just do things differently. The exercise ends with questions that are intended to help the pupil compare some of the material culture of his family with that of the Kazak.

Following Through with the Exercise. Among the activities that might grow out of this exercise are the following:

- Discussion of the customs of dress of other peoples.
- Bringing to class and displaying unusual utensils.
- Discussion of the relationships of animal and vegetable products.

Concepts and Terms. The new term that is used in the exercise is custom. A discussion of this concept would be particularly timely at this stage in the development of the unit. Is a custom the same as a tradition? Is a custom something that lasts a very long time? Questions such as these will help the pupil understand the meaning that we give to the term. Other words that might be discussed which appear in the exercise are coltskin flask, mare's milk, headdress, and distinguish. The main idea of the exercise is that all peoples have customs regarding dress and ornamentation and these customs are important in distinguishing individuals according to certain classifications.

Exercise 16: LOOKING UP

Presenting the Exercise. There is a double meaning to the title that probably will escape most of your pupils. The pun, however, is not intended to be merely an attempt at humor. There is a chain of command, according to many people, from God to children. If adults are able to receive guidance from a deity, they assume that the wisdom they receive can be passed on to others, including the children in their families. The pupil is asked to put himself in the place of the Kazak child and imagine what kind of advice he receives from higher up. So, he tries to think what it is like for the Kazak youngster looking up to his elders. In order to do a good job of this exercise, the pupil will have to do some research. As far as we are concerned, if he answers the questions with resource materials besides the booklet, he is fulfilling our hopes. None of these exercises should be construed as a test. (Those come at the beginning and at the end of the unit.) So any aids the pupil uses in answering the questions are quite legitimate.

Following Through with the Exercise. The principal activity that we would hope might arise from the administration of this exercise is an investigation of various faiths and religious customs. Research concerning the role of children in the Kazak family should be part of the pupil's interaction with the exercise itself.

Concepts and Terms. Although your pupils should have encountered the word during the early stages of their study of the Kazak, they may need some memory-freshening regarding Islam. Perhaps first-grade children will need to have the word recite clarified. The generalization that may come out of the pupil's completing the exercise is that the situation of the Kazak child is probably a good deal like his own. As part of the enculturation process, they both get lots of advice.

Exercise 17: K-A-Z-A-K

Presenting the Exercise. The first question posed in the exercise may not elicit a response from some of the children in your class, but many will see that the circumstances of the Kazak family's meal are quite similar to their own family's when eating a picnic lunch. After a brief reference to grace, the exercise concludes with a word game. This is a simplified version of the game in which a word is spelled out vertically twice; the first time it is spelled downward on the left, and the next time it is spelled upward on the right. Space is left in between the two columns to allow the player to fill in letters and thereby make words. If the game is played competitively, the first one to complete all the lines is declared the winner. Since the principal requirement of the game presented in the exercise is that the words have something to do with the unit of study, we made it easier by not requiring that there be certain letters at the ends of the words.

Following Through with the Exercise. The logical follow-through activity for this exercise is to play the game again with a different word and a different topic. The words chosen usually have to be selected with care as it is evident from the difficulties that the pupil would have experienced if we had made the word for this exercise "Kazak."

Concepts and Terms. All of the concepts and terms that have been employed in the Pupil Text, the Pupil Study Guide, and this booklet are highly eligible entries in this word game. It should be interesting to see just which words are selected by your pupils.

THE ARUNTA

Exercise 1: ONE NAME FOR MANY

Presenting the Exercise. The initial exercise of the sixteen in the booklet about the Arunta calls for a generalization on the part of the pupil. If the people in France are called French, the people in England are called English, and the people in Italy are called Italians, what do we call ourselves? The nearly unanimous name is "Americans" (we are called "United Statesians" only in fun). The point of this series of questions is not that you can usually know what name to give a group of people by referring to the name of the country in which they live, but that, although we have one general name, Americans differ terrifically. Perhaps Australians don't differ as much among themselves, but they do have aboriginal peoples as we do. Accordingly, the rest of the exercise is devoted to encouraging the pupil to find out as much as he can about the aboriginees of Australia. The subject of the booklet, of course, is one group of these indigenous peoples of the great island-continent.

The exercise closes with a question which is supposed to lead the pupil to see that in many respects the Arunta are similar to some of our Indian tribes or nations. The American Indians as a whole had a more advanced technology at the time of the European invasion of our continent. At the beginning of the sixteenth century, perhaps only a few of the native peoples of America had as undeveloped a technology as the Arunta have now. (The Indians who lived along the coast of California were also hunters and gatherers and were similar to the Arunta in some respects.)

Following Through With the Exercise. Inasmuch as this is the first of the exercises in the pupil's booklet, it sets the mood for the ones to come. The exercises are written from a readily identifiable position. That is, we believe that the pupil will learn more if he becomes involved in the subjects presented and then goes beyond the materials he is given by using his imagination, by trying to acquire more information, by using the information he has gained in some way, and by raising questions that he has about the subject matter. It takes a sensitive and enthusiastic teacher-guide to help many pupils become this kind of self-propelled learner. We are confident that the materials in the booklet in and of themselves won't transform listless pupils into self-starting scholars. So we must leave the manner in which these exercises are introduced and administered up to you. As a professional, you have the background, skills, and desire to do whatever should be done to help your pupils learn about the culture of these preliterate people and about their own culture. The booklet is only incidental to these goals. If it is not "doing the job," we urge you not to worry about using it.

Concepts and Terms. Words such as *ancestor* and *encyclopedia* should be familiar to most elementary school children, but you may want to discuss *aboriginal* with your pupils. This, of course, is the key term in the exercise. The two principal generalizations that should be made by the pupil when he has completed this exercise are that there is a diversity of culture within most countries, even though the people who inhabit the countries are given one name, and that preliterate people have less advanced technologies than the inhabitants of cities in the Western World.

Exercise 2: THE MIDDLE OF SOMEWHERE

Presenting the Exercise. The second exercise of the pupil booklet about the Arunta is based on the teaching technique of heightening anticipation by asking the reader to make plausible guesses regarding titles or illustrations. In this case, the pupil is asked to make four guesses regarding the climate of central Australia. Having found out in the previous exercise something about the aboriginees of this area, he is now invited to investigate the relationships of these people with their environment. It should be emphasized that the pupil is not merely to guess about the rainfall, humidity, temperature range, and winds. He is also to acquire some solid facts about these features of the central Australian climate. By first hypothesizing and then checking up on his hypotheses, the pupil is more likely to retain the information he puts down in the second part of the exercise.

Although the pupil has done a little research concerning the inhabitants of this arid region in the middle of Australia, he is asked to think some more about what people who can survive in such an environment might be like. Notice that, after each question which calls for a conjecture in this part of the exercise, there is a follow-up question: "Why do you think so?" The pupil is not invited to simply toss out a random thought; he is asked to back up his conjecture with some reasoning.

The final question, "How can you become a better guesser concerning important matters?" is a summation of why the exercise is presented to the pupil. There are ways for individuals to become more educated or accurate in their guesswork. In a sense, this is what the business of science is all about. It might be worthwhile to have someone write on the chalkboard the various ways your pupils propose that guessing be improved.

Following Through With the Exercise. This exercise was placed at the beginning of the booklet because it provides an orientation for many of the exercises which follow it. We want the pupil to hypothesize, to look into matters to gain better pictures of the topics he is studying, to try to see relationships among elements, and to use his imagination. This is our orientation, of course, and we hope that it is yours, at least in part. With regard to the factual materials acquired in this exercise, the pupil should have many occasions during his adventures with the unit to use these basic data.

Concepts and Terms. For primary-grade children, terms such as humidity, precipitation, and atlas may be strange. If you are presenting these materials to first-graders, we assume that you will translate the wording. (Any primary teacher with more than two months' experience is fairly adept at the translation routine.) However, the concepts of humidity and precipitation should be dealt with rather fully. The generalization which we hope the pupil will come up with is that the environment in which people live has a great deal to do with their style of living. In the case of a people with limited technological resources such as the Arunta, the environment is quite restricting.

Exercise 3: AN ARUNTA HOUSE

Presenting the Exercise. The division of labor topic is brought up again at the beginning of this exercise. All of the members of an Arunta family pitch in and help to construct the house in which they live. It is not a very complex undertaking, and so it may be that some people are not framers and others thatchers. Therefore, there is probably no division of labor in the actual construction process. Moreover, the statement is made in the exercise that "there are no special house builders among the Arunta." The Arunta learn to perform the important tasks that must be performed, and they do not encourage specialists. There are a number of good reasons for this, and the pupil can figure them out by considering the social organization and the technology of this group of people.

The second section of the exercise consists of having the pupil hypothesize about the several steps required in order to build an Arunta house. If he has built a similar structure, he can rely upon his own experience. However, it shouldn't be necessary for the pupil to have built a fort or tree house or club house in order to come up with four logical steps (or more). The illustration makes the operation rather clear. This, then, is practice in making inferences about the things seen in a picture.

The exercise ends with questions that are designed, once again, to relate the life of the Arunta to the pupil's life. He is asked to recall something that he has built that is similar to the Arunta house. If the pupil has built a sturdy house that is still standing, he may think that the Arunta house is a semi-permanent structure. On the other hand, if the house he built was of discarded lumber and lasted a short time, he will see the logic in the last question: "How long did it last?" Since they are a nomadic people, the Arunta don't design their houses to last a long while. Houses are temporary dwellings. Your pupils should see the relationship between the way these people subsist--by hunting and gathering--and their material culture.

Following Through With the Exercise. Some of your pupils may be interested in carrying on one or more of these activities after they have completed the exercise:

- Construction of a model of an Arunta house.
- Composition of a story, play, or poem about the Arunta's way of living.

- Painting or drawing some event in an Arunta family's day.
- Presentation of a puppet show.

Concepts and Terms. There would seem to be no words that might be unknown or misunderstood in the exercise. The principal generalization that should be drawn from the exercise is that dwellings are constructed according to the purposes of the individuals who inhabit them. In the case of a nomadic people, houses are temporary structures.

Exercise 4: ARUNTA LIFE

Presenting the Exercise. This exercise differs from the others in that it features two illustrations. The two scenes present a contrast in that in one three men are sleeping near separate fires behind a windbreak and in the other a nuclear family is "on the move" to a new site. So there are a number of points of comparison that could be noted if you would like to see how well your pupils can abstract from pictures. The business of the exercise, however, revolves around the inferences the pupil might make concerning the Arunta way of life. Perhaps the only challenging question posed is: "Do the Arunta depend a great deal upon fire?" The pupil may assume that there is quite a dependence upon fire for purposes of warmth and cooking, but he must then hypothesize as to how they create fire. It is unlikely that he can find references which are specific to the Arunta concerning this question, and so he must extrapolate.

Following Through With the Exercise. Here are just two possible activities that might grow out of the exercise:

- Construction of a mural depicting several scenes in sequence about the Arunta (hunting, moving, building a house, etc.)

- Making clay models of members of a nuclear family.

Concepts and Terms. The word nomadic appears in this exercise; and it, of course, is one of the most important terms used in the booklet. There are some words that might need discussion in a primary-grade class: vegetation, windbreak, sparsely populated, and densely populated. The main idea of the exercise deals with the relationship of the geography of central Australia and the Arunta way of life. A secondary theme is the provocative notion that people cannot live together without a system of rules or laws. The reasons for the laws should be discussed by your class, and someone might put the main points on the chalkboard.

Exercise 5: NETS

Presenting the Exercise. The concept to be dealt with in this exercise is trapping. There are a number of meanings for the word, but the meaning which is used here is "to catch." At the beginning of the exercise, the pupil is asked to draw a picture of some other use for the string bag which is shown in the illustration. (The principal function of the string bag, of course, is "to carry.") For many children, this activity is a relief from just filling in words on lines. For others who say, "I can't draw," it is an invitation to frustration. You will be the best judge of how the problem is handled. (Our guess is that the exercise will be more successful than most of the others in the booklet.)

The exercise-within-a-exercise that concludes "Nets" is an adaptation of an activity that appears in FOR THOSE WHO WONDER by Myers and Torrance (Ginn, 1966). It is just possible that some of your pupils will have interacted with it previously. You will notice that the items to be trapped or caught become progressively more abstract as the child proceeds to "happiness." Other items might be substituted for the four given; among those we can think of are: music, time, ants, butterflies, salamanders, frogs, worms, and measles.

Following Through with the Exercise. Several activities might spring from this exercise:

- Administration of another exercise such as this one.
- Construction of a bulletin board showing different types of nets (or traps).
- Discussion of different kinds of psychological traps for human beings.

Concepts and Terms. It would appear that there are no words used in the exercise which would be troublesome either to first- or fourth-graders. The main ideas of the exercise are that there are many ways to perceive tools, and tools (devices, instruments, utensils, etc.) can be used in many ways. The net is a good example of a flexible tool, and thinking about all its uses increases the flexibility of the pupil's thinking.

Exercise 6: FOR WORKERS ONLY

Presenting the Exercise. On several occasions, the answers to questions in the booklet are "given away" by subsequent questions and statements. This is not the result of our oversights. Although this booklet is not too similar to programed learning, it shares some features of a programed text. After questions there are spaces for responses, and then the individual proceeds to other items which call for responses. Unlike programed learning, however, the individual may skip around in the exercise, going back to items that were not fully answered previously. The goal is understanding through involvement, not accuracy nor progress through little steps.

In this exercise, the pupil is to think of tools in his own experience which are comparable to those of the Arunta. Once again he is invited to relate what he knows about his world to the little-known world of the Arunta.

Following Through With the Exercise. Among the activities that might be stimulated by this exercise are:

- Displaying tools, either modern tools or primitive ones.
- Drawing pictures of Arunta using tools.
- Presentation of a pantomime concerning Arunta using tools.

Concepts and Terms. None of the words in the exercise should present any difficulties for your pupils. The central theme of the exercise is that man is dependent upon the tools he makes to live and to accomplish his purposes, whatever these purposes may be. Where would we be without our tools? If you happen to be a person who is not mechanically inclined, you know how dependent you are upon people who can use tools effectively to fix water heaters, ranges, automobiles, toasters, heating systems, ad infinitum.

Exercise 7: A MATTER OF GOOD SENSES

Presenting the Exercise. Animals must use their sense to survive. Is this also true of modern man? Well, there might be two answers to this question. In order to survive in a city, one must be alert to certain dangers; but the same person who is alert to speeding automobiles and faulty wiring may be ignoring most of the sense data he receives, data that would not be ignored by a preliterate person. The enormous variety of data that is received by one of your pupils during a typical day is not directly comparable to the information attended to by an Arunta. However, everyone would agree that in using our senses fully we are able to enjoy more things and to lead richer lives. This is our contention, at least, and it is reflected in this exercise about "good senses."

Following Through with the Exercise. A great variety of exercises might follow this one. You can doubtless think of many little games that might be played which involve the senses of hearing, touch, sight, and smell. Any one of them would be a logical follow-up to this exercise.

Concepts and Terms. Apparently there is little in the way of a vocabulary lesson needed in conjunction with the administration of this exercise. The main understanding to be gained is that preliterate people must depend upon their senses in order to eat, and hence to survive. People in our society are usually not dependent upon their senses in order to live (progessional hunters and fishermen are exceptions).

Exercise 8: THE NEW FROM THE OLD

Presenting the Exercise. The generalization that is presented in this exercise is at once basic and sophisticated. Everything we know that is new comes from something older, and so perhaps this is the basic fact of life. Whether first-graders can grasp the import of this idea depends upon their mental maturity and background of experience with language. If the exercise seems too advanced for your pupils, you may either modify it or ignore it. It would be well, however, to have your pupils look at the illustration and make some observations regarding it.

Following Through with the Exercise. The number of instances in which your pupils can note new things coming from older things is infinite. You may be interested to learn whether they do in fact make generalizations of this nature after engaging in the exercise.

Concepts and Terms. Some of the tools that are used by the Arunta may be strange enough to your pupils to warrant discussion. Although first-graders are familiar with bowls, the type of bowl used by the Arunta could be vague in their minds. Similarly, the grinding stone might not be well understood by youngsters who have not seen such implements. (Fourth-graders will have had more opportunities to see and to handle such artifacts.) The principal generalizations to be formulated are that new life is created by pre-existing life and that older ideas make possible newer ideas. These are powerful generalizations, and they can be used in a multitude of ways in the academic and extracurricular lives of your pupils.

Exercise 9: THE HUNT

Presenting the Exercise. The technique employed here is one of making the pupil try to think of intelligent questions in order to gain information. According to many authorities, being able to ask the right questions is the most important part of research. Your pupils will probably need practice in asking questions in order to acquire the information they seek. Although we do not imply that there should be some strategy of questioning employed by the pupil as he tells what questions he would put to the hunters, the styles of questioning that are used by your pupils should vary considerably and you may wish to have the children compare their responses.

Following Through with the Exercise. Among the activities that might result from the pupils engaging in this exercise are:

- Investigation of the fauna of central Africa (in reference books and by consulting informed persons).
- Presentation of a pantomime of the hunters stalking their prey.
- Painting or drawing an Arunta hunt.

Concepts and Terms. The only new term in the exercise is marsupial. If any of your pupils is familiar with the word, it can be explained to the others. If none of your pupils knows the term, you might explain it or some of your pupils might find it in a reference book. The distinguishing characteristics of a marsupial should be pointed out, in either case. The generalization to be gained from engaging in this exercise is that there are many ways to acquire information, among which are interrogation and library research.

Exercise 10: GIVE ME SOME SKIN

Presenting the Exercise. This exercise will involve the pupil in thinking about methods of preparing food. Accordingly, it will be interesting to most youngsters because food is a favorite topic with them. Some of your pupils may be a little squeamish about the manner in which the Arunta cook the animals they kill, but their primitive method should be fascinating to your class. The questions concerning the pupil's experiences as a cook are designed to make him aware that there are different degrees of sophistication and skill in the culinary arts. The Arunta do not exhibit much sophistication in their cooking.

Following Through with the Exercise. Most of the follow-up activities for this exercise would have to do with food, such as discussing the preparation of food, making a bulletin board about food and its preparation, and demonstrating cooking methods (actually or in pantomime).

Concepts and Terms. It would appear that your pupils should be quite familiar with the words used in the exercise. The primary objective of the exercise is to make the pupil aware of the wasteful cooking practices of the Arunta. As a corollary, the pupil is asked to cite wasteful practices in our country. If he comes from an "average" home, it is likely that he can think of some. On the other hand, some wasteful practices, such as draining away the nutritious juices after cooking vegetables, might not be mentioned because he is probably not aware that they are wasteful.

Exercise 11: AN ARUNTA FAMILY

Presenting the Exercise. It is unlikely that the illustrations of the pupil's booklet will provide a very complete picture of the physical characteristics of the Arunta. However, this exercise is based upon the manner in which the pupil perceives the illustration on page 23. After studying it, he is to make stick figures or other representations of the family and then give the six Arunta names. After choosing names for the members of the Arunta family, the pupil is to try to estimate the ages of these individuals and to tell what their responsibilities might be. He has probably learned enough about the Arunta life to make good guesses about the jobs the various family members have, but guessing the age of each presents a different problem. Do the Arunta live to be fairly old? The odds are against it, living as they do in a harsh environment on a bare subsistence level. It should be quite interesting to learn how your pupils will respond to these questions.

Following Through with the Exercise. A number of activities might result from your administering this exercise, but the one which might be most helpful to the pupil's understanding would be an investigation of the vital statistics of the Arunta and other preliterate peoples.

Concepts and Terms. There are some longer words in the exercise that could prove troublesome to first-graders, words such as responsibilities (which they should have heard but might have a little trouble pronouncing) and reproducing and representation. If you have a first-grade class, you will probably do a little translating. There are several understandings to be gained: that the nuclear family is made up of a father, a mother, and their children; that the different members of a family have jobs to be performed; and that the kind of life an Arunta leads affects his longevity. The sharper of your pupils should also be able to point out that the Arunta not only lead a rigorous existence, they do not have the benefits of modern medicine to prolong their lives.

Exercise 12: GAMES

Presenting the Exercise. As the title indicates, this exercise is about games and playing. The Arunta children play, just as American children do. Their play reflects the activities of their parents and the culture of their people generally. The pupil is asked whether he thinks American boys imitate their fathers when they play games. In the past, there was probably more of this type of activity among boys, but for many decades now American boys are brought up to be not like their fathers. If the fathers are less than wealthy, they are usually anxious to have their sons surpass them in success and wealth (which tend to be equated in our society). The Arunta boy doesn't have much choice. He is bound to be a hunter and a gatherer, as his father is.

Girls are somewhat different in our culture. They are encouraged to learn feminine pursuits, having to do principally with domestic and social matters and the arts. More and more they are rebelling against being restricted to this stereotyped role, but there is still an urge within most of our girls to want to imitate mother in cooking and caring for children. If this urge disappears among the majority of little girls, we can't imagine what the consequences would be!

The exercise ends with questions that involve the pupil in directly comparing American games with Arunta games. He may not know enough about the kinds of games Arunta children play, but an attempt will be made to supply you with descriptions of a couple of these aboriginal games.

Following Through with the Exercise. In addition to playing aboriginal games, your pupils may become interested in these activities:

- Investigation of the amount of imitation by American girls of their mothers through reading, observation, and interview.
- Investigation of the relationship of the occupation of the father and the boy's ambitions through a survey or library research.

Concepts and Terms. None of the words used in the lesson should be difficult for your pupils. The generalization that should be made about the Arunta is that the boy imitates his father in play because he is practicing to become a hunter, in the same way that an American girl takes care of her "babies" (dolls) because she is practicing to be a mother. Perhaps a more important generalization to be made is that the Arunta boy is much more restricted in the models he has than is the American boy, who is frequently not inclined to be like his father--at least as far as his father's occupation is concerned.

Exercise 13: WHAT DO THEY HAVE IN COMMON?

Presenting the Exercise. This exercise is concerned with the social nature of man. It asks the pupil to think of the reasons people get together by having him imagine why the Arunta men in the illustration on page 27 are meeting.

The second section of the exercise involves the pupil in abstracting. He is asked what three items such as spear, hoe, and hammer have in common. There are six sets of these groups of three which the pupil is invited to think about. Each set relates in some way to one or more of the previous lessons in the booklet. Some are obvious, and others are rather subtle. We would like to caution you about saying one response is the "correct" one, however. Each triad could have many legitimate responses.

Following Through with the Exercise. Oftentimes a profitable activity, when children have engaged in an exercise such as this one, is to have them create their own items for abstracting. It requires a good deal of thought just to come up with a good set of items, and perhaps this kind of review is as effective as going over the material in more conventional ways.

Concepts and Terms. Several of the items in the abstracting part of the exercise might be obscure to first-graders, and you can undoubtedly think of more appropriate items for your pupils. Among those that might cause difficulty are wombat, companionship, and grub. It may not be important to define wombat to a fourth-grader, but companionship and grub should be discussed if any of your pupils are unfamiliar with these words.

There are two parts to this exercise, and there are two generalizations to be made. First, people get together for their mutual benefit. The advantages of meeting in groups can be inferred by your pupils from the groups activities of the classroom and school and from what they know of the social and business activities of their parents and other adults. The other generalization is that one of the principal functions of thinking is to see relationships among things. This generalization may not be fully grasped by your pupils at the conclusion of this exercise, but before long they will be able to learn to use it consciously.

Exercise 14: COMPARISONS

Presenting the Exercise. The exercise begins with a request that the pupil compare the four men getting ready for a totem ceremony on page 29 to a scene they had witnessed. Depending upon the experiences of the pupil, his response could be quite revealing. Our guess is that the range of responses of an average middle-class group of children would go from religious ceremonies to athletic events to social affairs (such as square dancing). At any rate, the pupil probably will think of something in his experience which is similar.

The next comparison to be made is between the four men and any other four things--people, animals, or plants. In the same way that the first part of this exercise invites a revealing response (we trust not too revealing), this section will enable the pupil to use his memory and his imagination in producing a response that will tell something of his background and the way he thinks. The purpose of the exercise is not to probe into the pupil's homelife, but often a teacher can learn important facts about a pupil as a result of getting responses to questions such as these.

The third and last section of the exercise invites the pupil to compose several analogies. The term is not fully explained, and so you may want to talk about analogies, similes, metaphors, and other figures of speech. The word comparison covers all of these devices, and so it can be used by primary-grade teachers if nothing much is to be gained by a discussion of figures of speech.

Following Through with the Exercise. The logical outcome of a lesson devoted to analogies is the incorporation of analogies in poems, stories, and limericks. Your class may be one that enjoys playing with words, in which case this exercise might precipitate some entertaining and satisfying writing activities.

Concepts and Terms. The central term of the exercise, of course, is analogy. There should be a discussion of the word ceremony. This exercise is probably a good one to follow "What Do They Have in Common?" because they both emphasize seeing relationships. As you know, the entire booklet has this theme of seeing relationships. Specifically, the generalization that we hope the pupil gains is that people can be compared to all kinds of things, and when we compare them in these various ways we learn more about mankind.

Exercise 15: MAN AND NATURE

Presenting the Exercise. The title of this exercise seems particularly appropriate to any lesson about the Arunta. They live very, very close to nature. There are differences between their relationships to nature and those of the animals in their land, but they subsist in an animal-like way. It is hard to locate a people who are more bound to the natural phenomena surrounding them. As is the case with many preliterate peoples, the Arunta attempt to influence nature by superstitious practices.

In the second part of the exercise, the pupil is asked to compare the Arunta with the Hopi or Navaho. It is suggested in the exercise that he consult an encyclopedia such as World Book. However, there are many sources of information about the Hopi--books, resources persons, films, film strips, etc. Here is another opportunity for you to help the pupil learn how to go about finding data. The manner in which he organizes his search is crucial to the amount and quality of his information. Most educators would agree that, in view of the increasing number of research projects and independent studying being done in the secondary schools, giving your pupils an opportunity to develop skills for doing research is one of the most practical and valuable things you can do.

Following Through with the Exercise. An excellent follow-up activity for this exercise is to investigate the various superstitious practices engaged in by members of the pupil's community. Because there are forces that man has never learned to control, there is a feeling of doubt and insecurity within him that finds expression in superstitious behaviors. Undoubtedly your pupils engage in a number of these behaviors because they have learned them from their parents. We certainly do not live in an age of superstition, but superstition is evident wherever men can be found.

Concepts and Terms. The word ceremony is used again in this exercise, and it is one of the key terms. Environment is another important term in this exercise. Both words are worthy of brief discussions prior to the time when your pupils tackle the lesson. The generalization to be made is that people in preliterate societies have ceremonies or rituals in which they hope to influence future events. Since the actions of the men and the events that ensue are actually unrelated, we call these formalized behaviors superstitions.

Exercise 16: THE INITIATION

Presenting the Exercise. The final exercise in the booklet about the Arunta is based upon the illustration of the painted Arunta boy who is being initiated into manhood. The pupil is asked what he thinks "to be initiated" means, and then he is asked if he has known anyone who has been initiated. Because children often have clubs when they are seven, eight, or nine, this is a question that might well produce some authoritative answers. Even the six-year olds might have first-hand knowledge of initiation proceedings. It is likely that what your pupils know about initiations differs considerably with the circumstances of the Arunta boy's initiation, but they should still grasp the significance of the idea. That is, men draw attention to the initiate's new status; they make much of an individual's passing from one stage in life to another. Often young men have to prove their worthiness by trials. Occasionally there is an element of an ordeal in the ceremony for girls when they advance to womanhood, as exemplified by the Comanche girls who run with the horses (and risk serious injury).

The exercise concludes with an invitation to the pupil to write a story about the painted Arunta boy. An alternative suggestion of drawing a comic strip is also given. If neither idea appeals, a pupil might put on a puppet show or play. The activity should be broad enough in scope so that many of the concepts and facts acquired in the booklet are drawn upon or incorporated into the pupil's work.

Following Through with the Exercise. Although this is a culminating type of exercise, the pupils in your class might want to explore the initiation rites of various peoples. Of course, the initiation ceremonies of many fraternal organizations are secret, but these "modern" ceremonies could prove to be the most interesting of all.

Concepts and Terms. Very few of the words would seem to be unfamiliar to your pupils. Perhaps proceedings might be a little strange to some first-graders, but a brief explanation should be sufficient to clear up the expression. The generalization to be formulated is that people all over the world have special occasions when they make known that an individual has reached a certain status or level. The Arunta have an initiation ceremony for young men, and the Jewish people have an analogous ceremony for their young men. People are pretty much alike all over the world because they are, after all, people.

APPENDIX D

ANTHROPOLOGY CURRICULUM PROJECT COMPOSITE TEST, FORM I

A Sequential Curriculum in Anthropology

TEST: FORM 1
Composite Form for Pre- and Post-test

Publication No. 40

ropology Curriculum Project
University of Georgia
Athens, Georgia

Revised January, 1968

Name______________________________ Age______

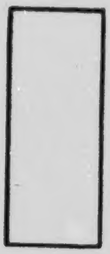
Teacher___________________________ Grade ______

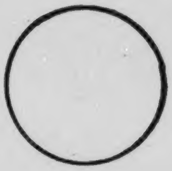
School_____________________________________

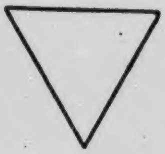
City______________________________ Score ______

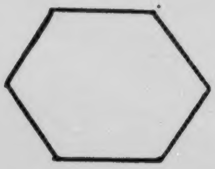
MPLE QUESTIONS

Mark the picture which shows a circle.

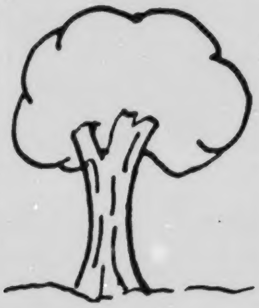


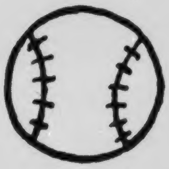


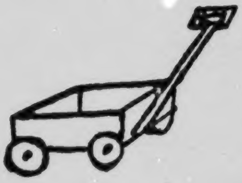


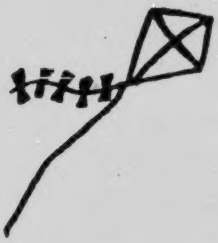


Mark the one which is NOT a toy.

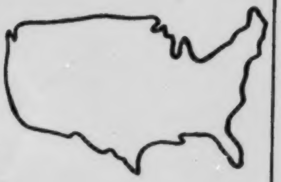


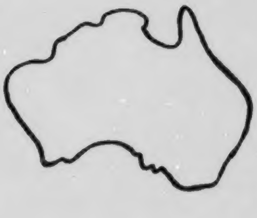


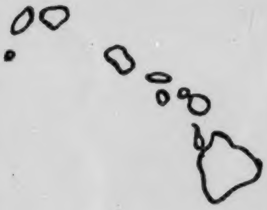




ark the one which is a map of where we live.



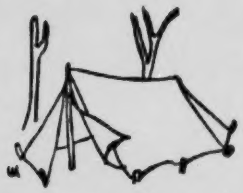


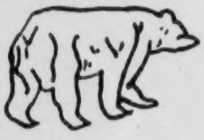


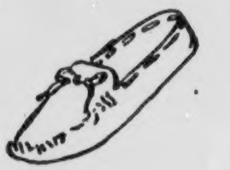
k the word which tells what we study about most in anthropology.

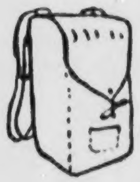
DOG	HOUSE	MAN	WORLD

3. Mark the one which could be called clothing.

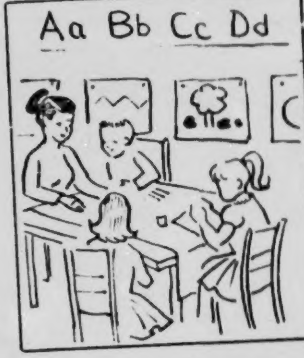


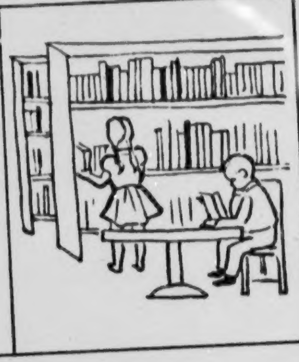


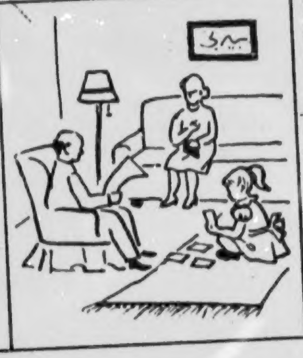


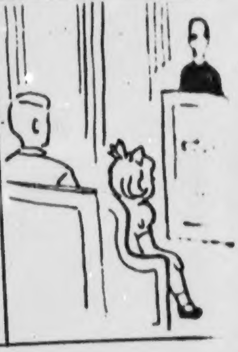


4. Mark the picture which shows where a child first begins to learn about his culture.

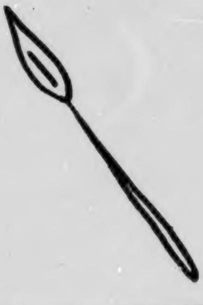


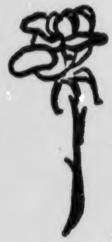


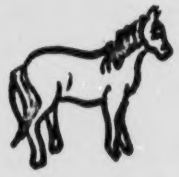


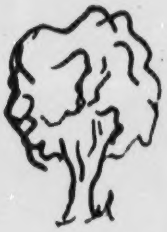


5. Mark the picture which shows an artifact.

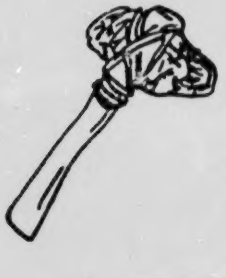


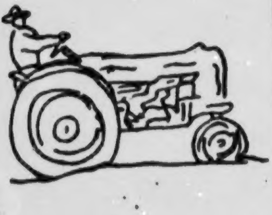


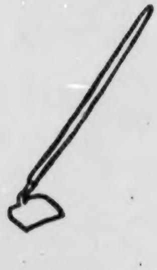


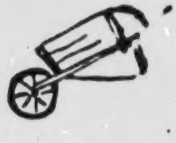


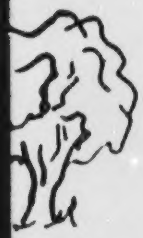
6. Mark the one which was probably used longest ago to get food.



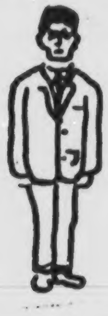


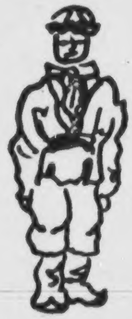


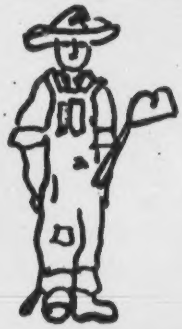


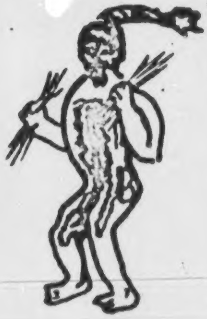


ark the culture in which clothes are worn for decoration only.

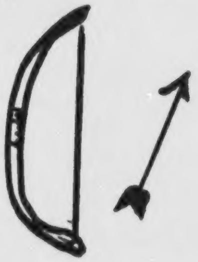


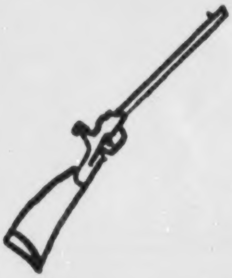


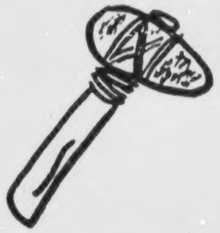


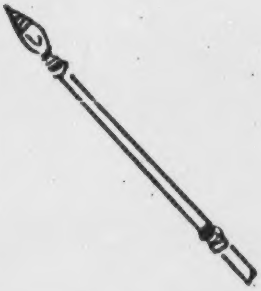


ark the tool which would be used by the Arunta in hunting.

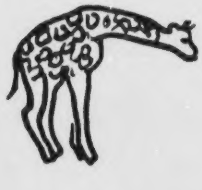


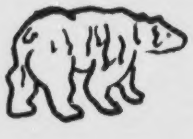


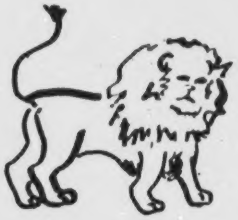


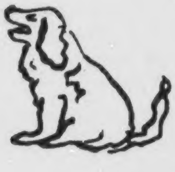


ark the one which would most likely be a domesticated animal.

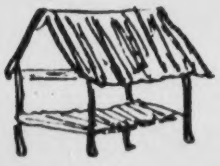


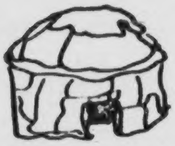


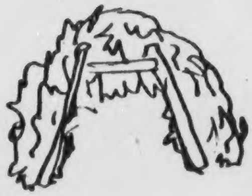


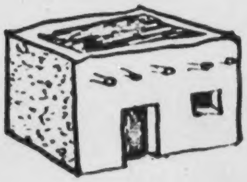


ark the type of house which would most likely be found where the weather is cold.

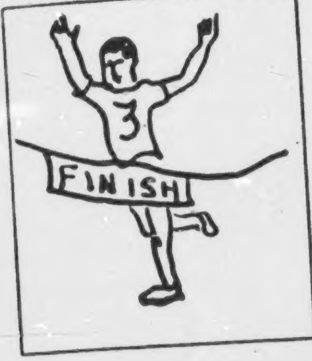


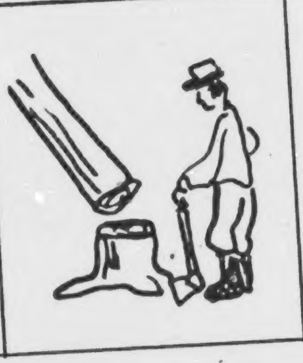
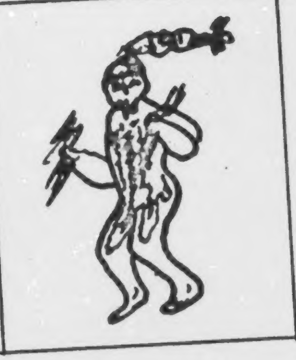
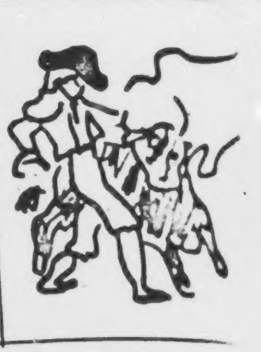




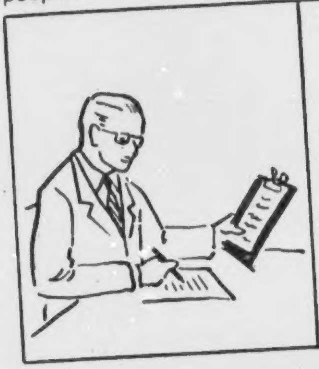
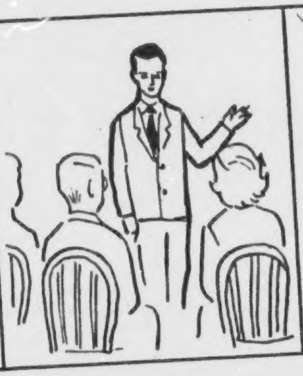
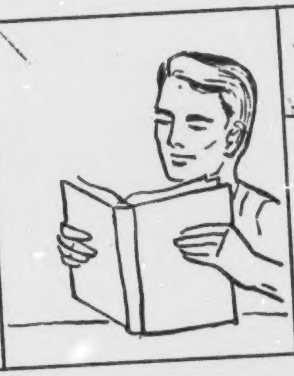
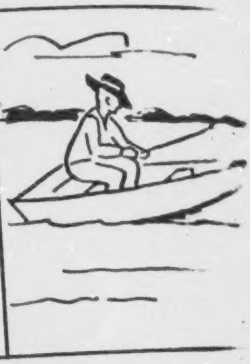


11. Mark the picture which shows a religious ceremony.

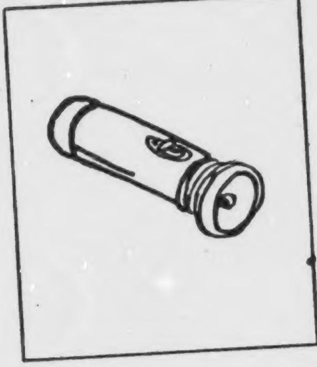
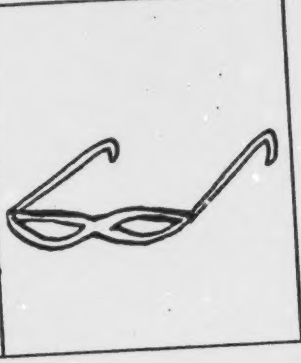
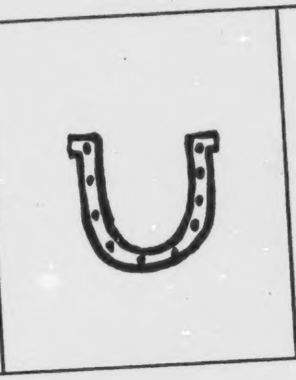
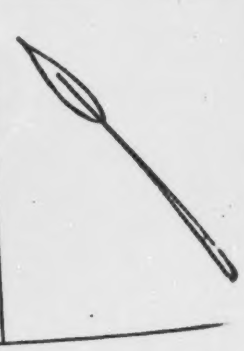


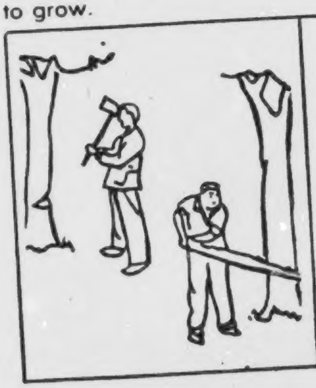
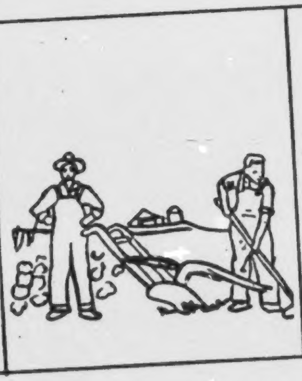
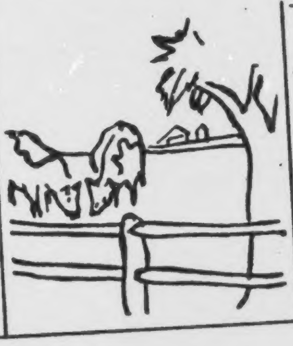
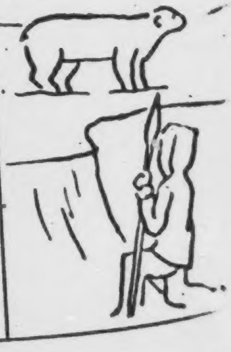
12. Mark the picture which shows the first thing an anthropologist should do after he visits a new gro people.

13. Mark the one which is used as a magical object.

14. Mark the picture which shows how people would probably make their living where it is too cold t to grow.

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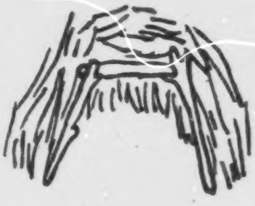
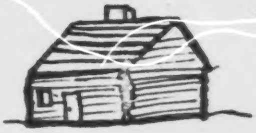
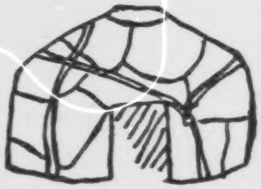
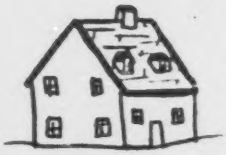
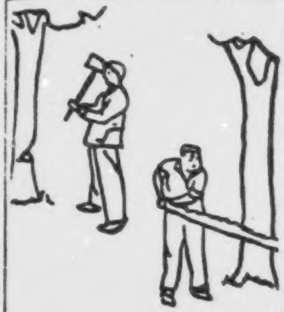
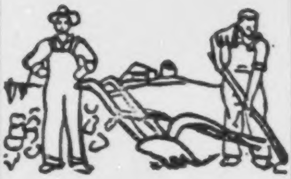
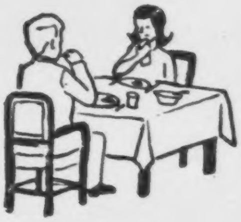
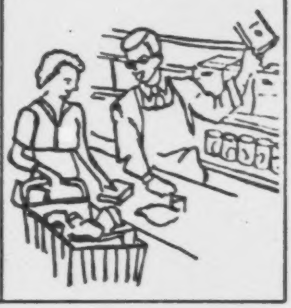
loo cold for

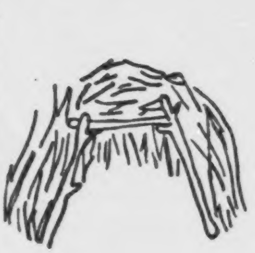
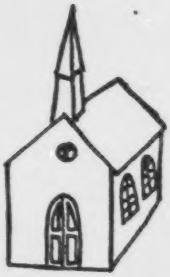
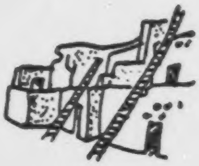
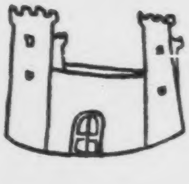
Mark the house which would probably be used by people who get their food by hunting and gathering.

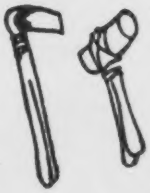
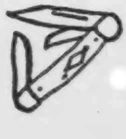
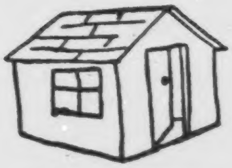
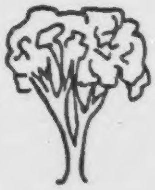
Mark the picture which shows people working together to produce food.

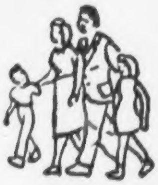
Mark the one which is NOT a place where people live.

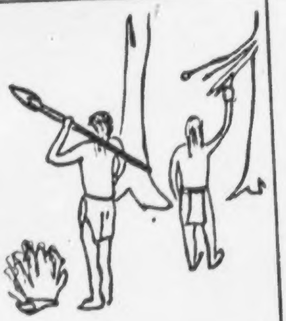





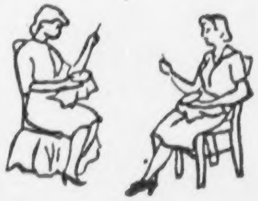
Mark the one which is NOT a culture trait.

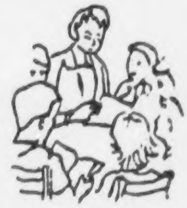





19. Mark the people who live in a community different from the others.

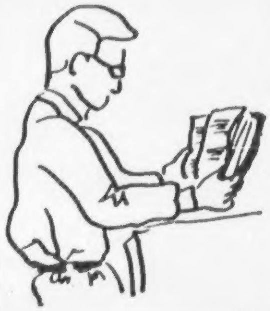


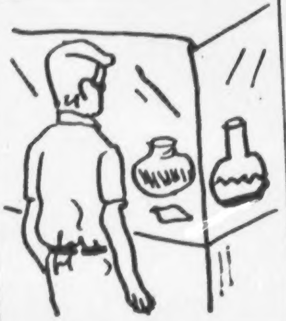


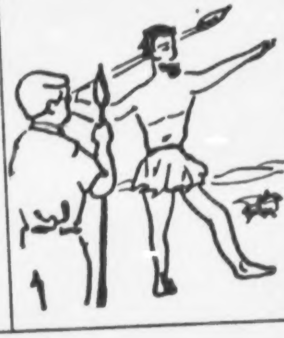


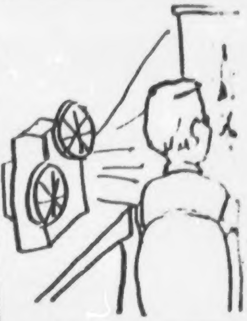


20. Mark the picture which shows the best way to learn about a new group of people.

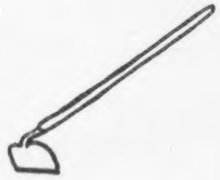


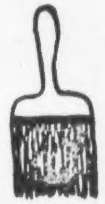


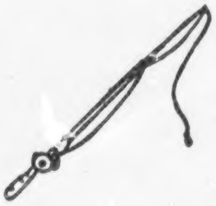


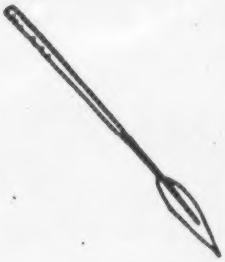


21. Mark the tool which would be used by people to help them get their food by farming.

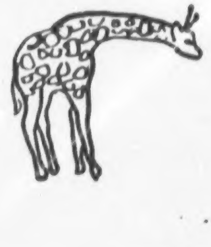


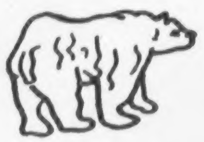


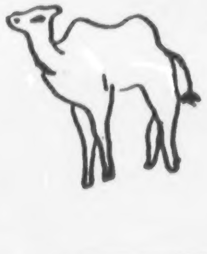


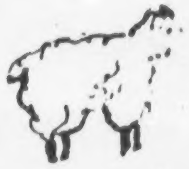


22. Mark the animal that the Southern Kazak sometime keep in their horse herds.

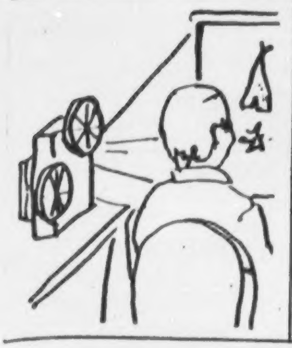


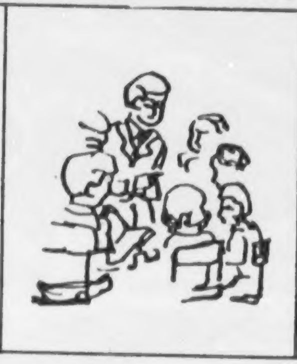


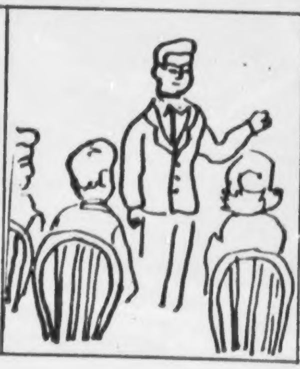


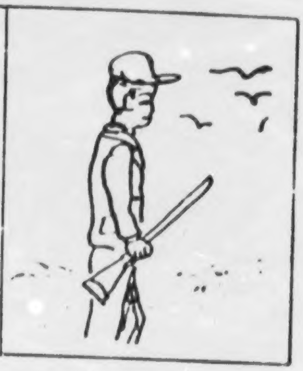


Mark the picture that is **not** a method used in studying man.

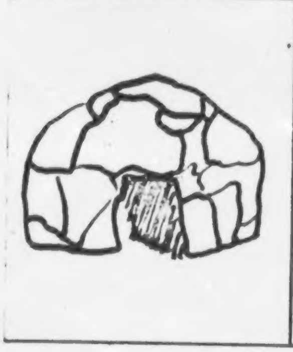


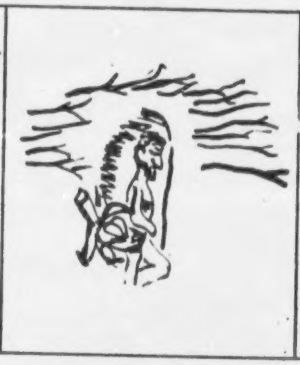


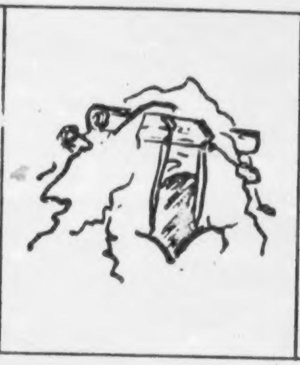


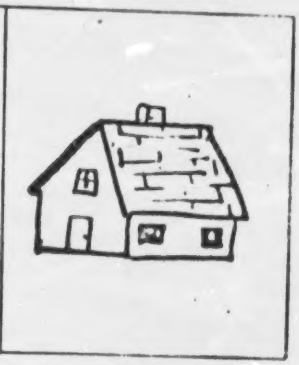


Mark the type of shelter the Arunta use.

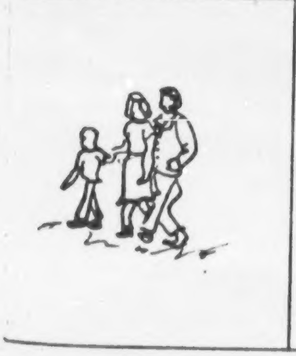


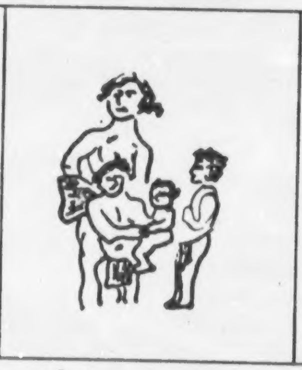


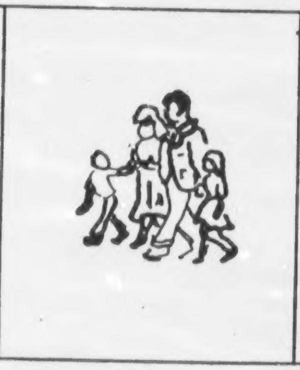


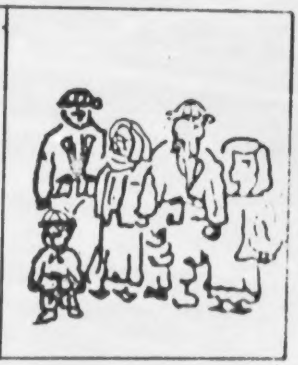


Mark the picture which shows the Kazak household.

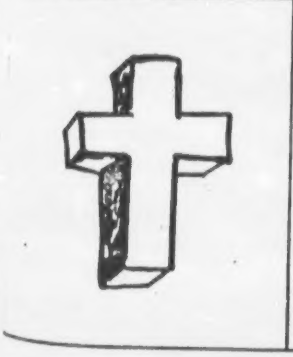


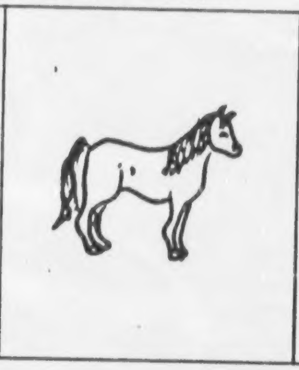


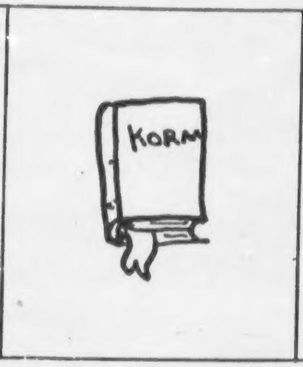


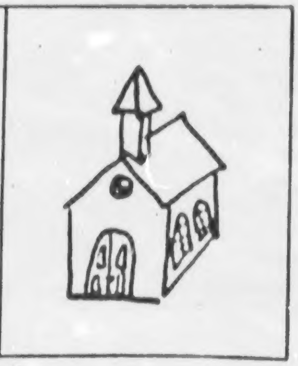


ark the one which is part of the Kazak religion.

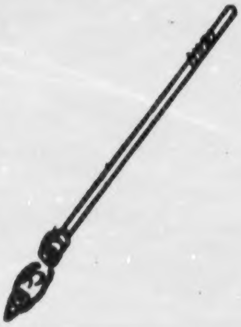
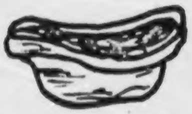
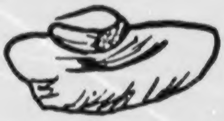
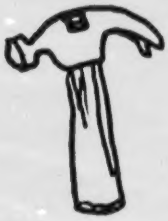




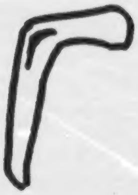
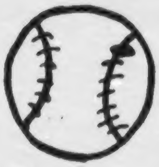
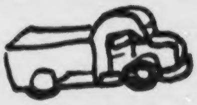
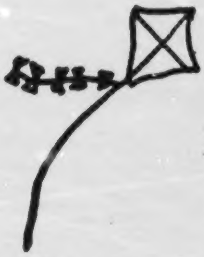




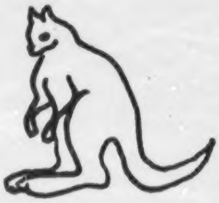
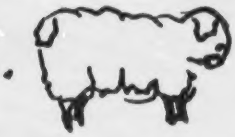
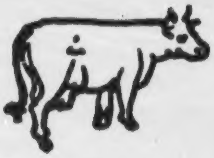
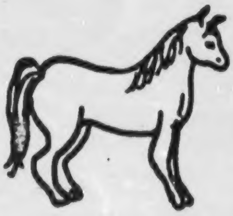
27. Mark the one which is **not** a part of the Arunta culture.

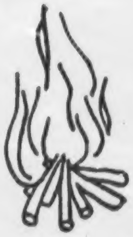
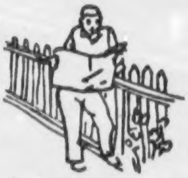
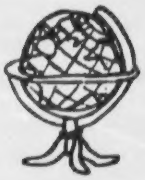
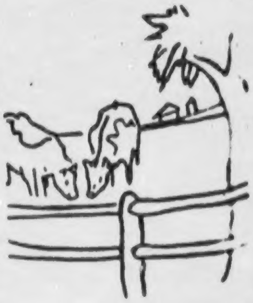
28. Mark the one which is used by the Arunta boy in playing.

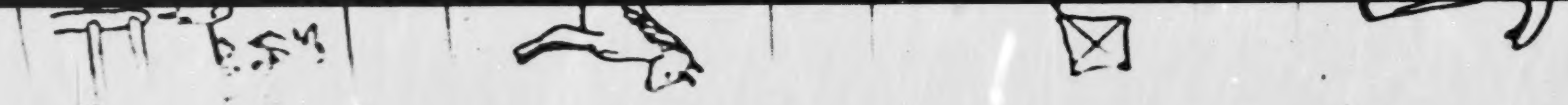





29. Mark the animal whose skin is used for clothing.

30. Mark the one which we study about most in anthropology.



EXPERIMENTAL MATERIAL, 1968

Developed 1965 by William W. Greene, Jr., under the supervision of Dr. Warren G. Findley; revised 1966 by Marilyn J. McCrary under the supervision of Dr. Albert J. Kingston; revised 1968 by Robert L. Turknett under the supervision of Dr. Albert J. Kingston and Dr. E. Paul Torrance. To be used in connection with "A Sequential Curriculum in Anthropology, Grades 1-7."

The curriculum development reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare, under the provision of the Cooperative Research Program (Contract H-128/OE 4-10-204).

APPENDIX E

ANTHROPOLOGY CURRICULUM PROJECT COMPOSITE TEST, FORM IV

A Sequential Curriculum in Anthropology

TEST: FORM 4

Composite Form for Pre- and Post-Test

Anthropology Curriculum Project
University of Georgia
Athens, Georgia

cation No. 42

Revised
January, 1968

DIRECTIONS

This test consists of fifty items plus ten optional items. Each item has four possible answers. You are to re question carefully and choose the **one** answer you think is best. On your answer sheet blacken in th having the same number as the answer you think is best. There is only one right answer for each Do not write on this test booklet.

Look at the following examples.

EXAMPLES:

A. Georgia is a

1. city.
2. nation.
3. state.
4. county.

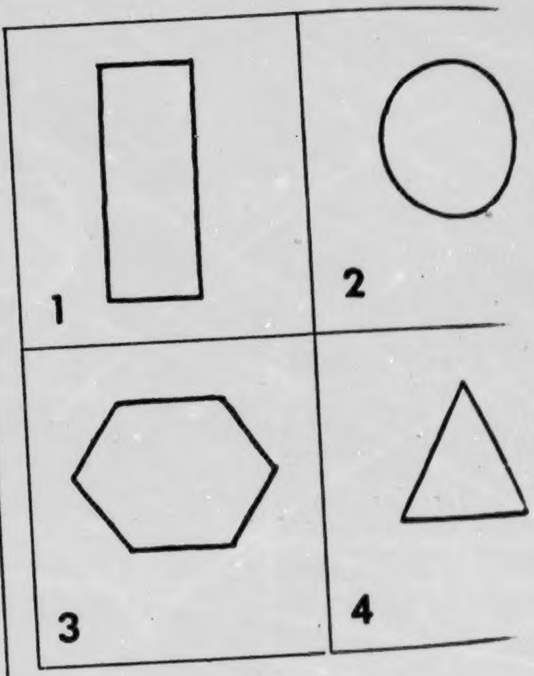
B. Which of the following is NOT an animal?

1. Doll
2. Cat
3. Kangaroo
4. Dog

C. Each of the following is a day of the week EXCEPT

1. Sunday.
2. Tuesday.
3. Friday.
4. June.

Use these four pictures to answer the question below them.



D. Which of these pictures shows a circle

1. Picture 1
2. Picture 2
3. Picture 3
4. Picture 4

u are to rea
cken in the
for each que

n.

ows a circle?

The earliest way of getting food was probably

1. chopping and picking.
2. agriculture.
3. horticulture.
4. gathering and hunting.

Which of these tools was probably the earliest used by man?

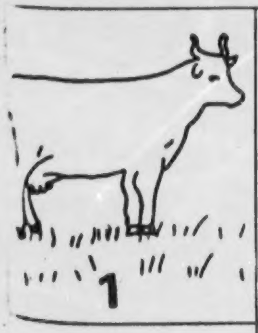
1. Bow and arrow
2. Digging stick
3. Iron hoe
4. Spear thrower

A child first learns about his culture from his

1. playmates.
2. class in school.
3. family.
4. church group.

Which of the pictures below shows a material culture trait?

1. Picture 1
2. Picture 2
3. Picture 3
4. Picture 4



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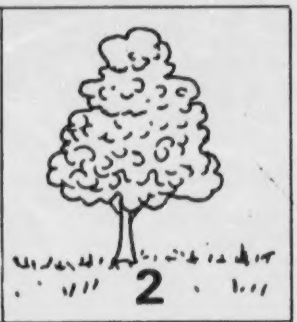

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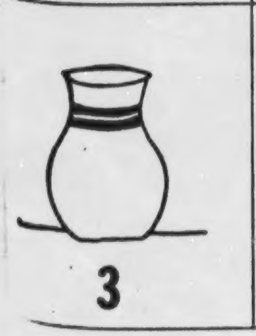

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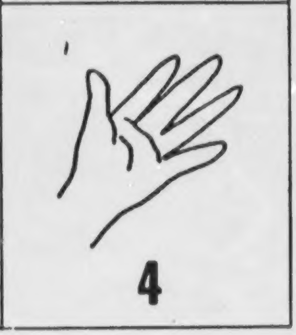
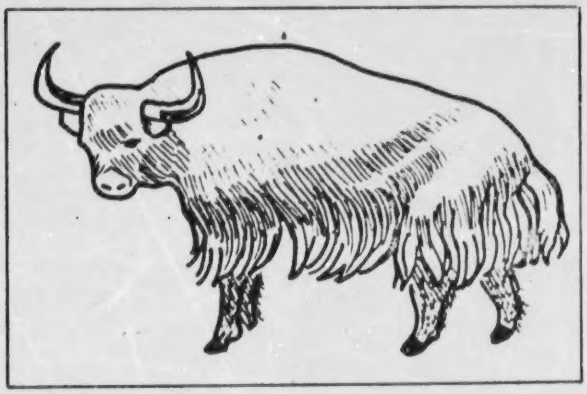


4

5. The things which we think and believe are all part of our
    1. economy.
    2. culture.
    3. technology.
    4. social organization.

6. Which would be the best way for an anthropologist to learn about a new group of people?
    1. Read a book on the history of the people.
    2. Watch a movie about the life of the people.
    3. Live with the people for a period of time.
    4. Listen to a missionary describe his work with the people.

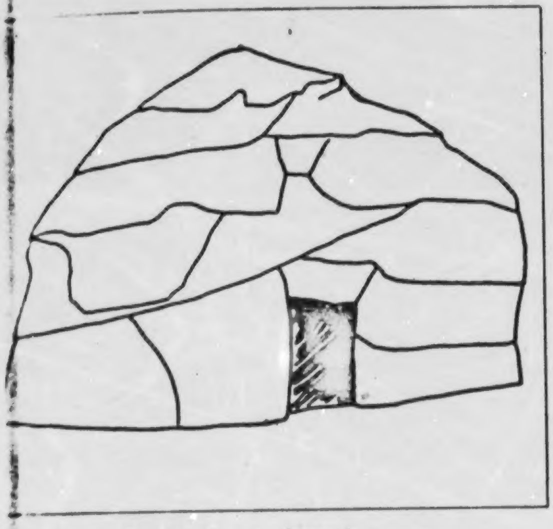
7. Use this picture to answer the question below it.



The animal in the picture above is a

1. yak.
2. yam.
3. yen.
4. yurt.

Here is a picture of a house. Use it to answer the Question below it.



The house in the picture above is a

1. yak.
2. yam.
3. yen.
4. yurt.

Which of these is an extended family?

1. Mr. and Mrs. George Brown and three of their four children.
2. Miss Mary Jones, her brother Jack, and their mother.
3. Mrs. Louise Black (whose husband is dead) and her four children.
4. Mr. and Mrs. Sam Smith, their two children, and Mr. Smith's mother and father.

Which of these is necessary for people to be able to live together in a village?

1. Building of roads
2. Production of food
3. Development of metal working
4. Development of trade

Read the following story. Use what you learn from
to answer questions 11-15.

An anthropologist observes a group of pe
He notices that they live in very crude houses and e
sleep out of doors much of the time. They must co
stantly move around to find animals to hunt and ro
to dig for food. They use sticks and stones for to
To learn more about them, the anthropologist deci
to join in their search for food. He stays with the
for several months, and then returns to his own ho
to tell others about the new people.

11. The anthropologist could be called
    1. an archeologist.
    2. a cultural historian.
    3. a linguist.
    4. a participant observer.

12. The tools used by these people could be called
    1. pottery.
    2. artifacts.
    3. values.
    4. vehicles.

13. These people might be the
    1. Arunta.
    2. Eskimo.
    3. Hopi.
    4. Kazak.

14. These people make their living by
    1. agriculture and herding.
    2. horticulture and grazing.
    3. hunting and gathering.
    4. technology and art.

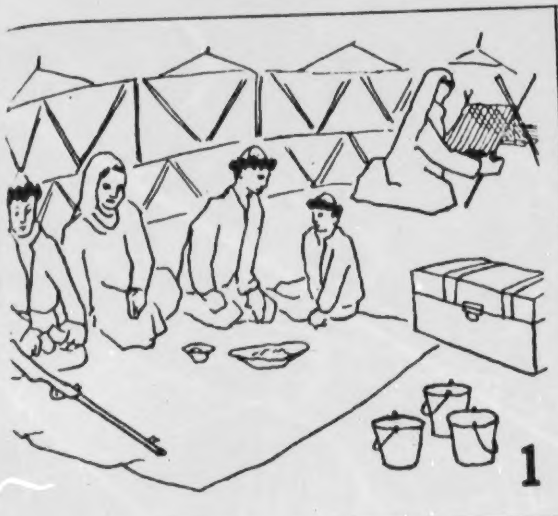
15. After he returns home, the anthropologist will tell
others about the group of people he has studied
Which of these would he need MOST to help h
describe these people?
    1. Examples of the tools used by the people
    2. Daily records of the activities of the peo
    3. One of the men from the group of peo
    to come home with him
    4. Pictures of the religious ceremonies of the
    people

Here are four pict

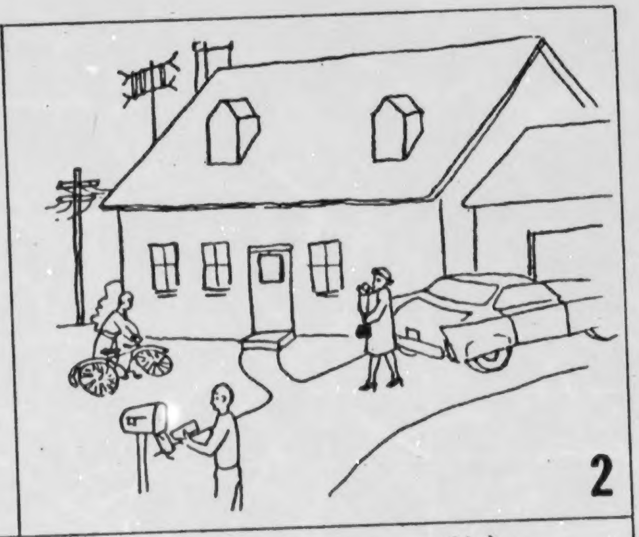
. Which is likely

1. Family 1
2. Family 2
3. Family 3
4. Family 4

re are four pictures of families. Use the pictures to answer questions 16 & 17.



1



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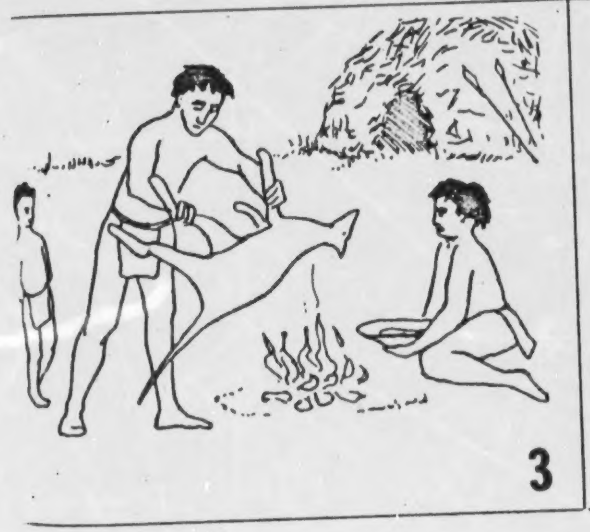

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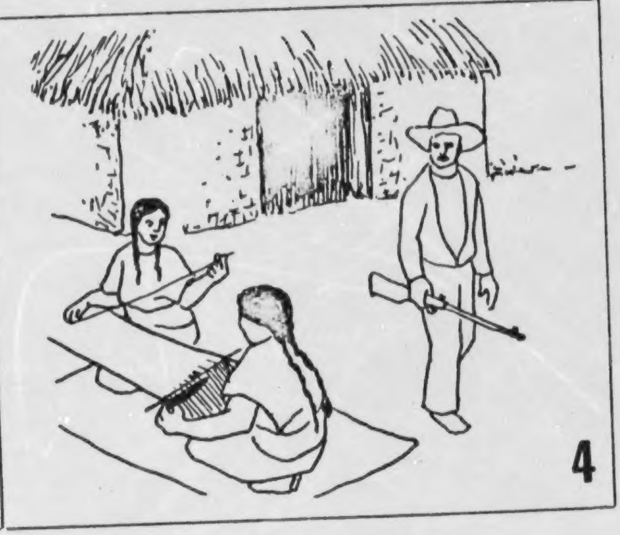

4

Which is likely to be an Arunta Family?

1. Family 1
2. Family 2
3. Family 3
4. Family 4

17. Which is likely to be a Kazak Family?

1. Family 1
2. Family 2
3. Family 3
4. Family 4

Which of these is a nuclear family?

1. Mr. and Mrs. Bill Smith and their two children
2. Mr. and Mrs. Sam Jones and Sam's brother Joe
3. Brothers Bob and Tom Johnson and both of their wives
4. Mr. and Mrs. Jim Brown, their three children, and Mrs. Brown's mother.

Which of these is necessary for people to be able to live together in a city?

1. Manufacturing
2. Transportation
3. Religion
4. Agriculture

Which of these is an aspect of Arunta social organization?

1. Government
2. Occupation
3. Level of Education
4. Kinship

Which of these could be called consumer goods?

1. Factories
2. Foods
3. Tools
4. Weapons

People who get their food by hunting and gathering USUALLY live in

1. wooden or brick houses.
2. wagons.
3. huts, tents, or natural shelters.
4. log cabins.

23. Which of these is a type of field study?

1. Living with a new group of people
2. Looking at artifacts in a museum
3. Reading books about a group of people
4. Studying anthropology in school

24. Which of these is an aspect of Kazak social organizations?

1. Common interests
2. Kinship
3. Level of education
4. Technology

25. The process of learning one's own culture is known as

1. acculturation.
2. bioculturation.
3. deculturation.
4. enculturation.

26. People who make their living by herding USUALLY live in

1. caves.
2. homes which can be taken down and put up quickly.
3. wooden houses.
4. brick houses.

27. Which of these statements is true about culture?

1. The way of life of a group of people is their culture.
2. While individual people are different, culture is the same everywhere.
3. Cultural differences are always very difficult to recognize.
4. Although cultures may be different, culture traits are the same everywhere.

Which of these is N
organization?

1. Church group
2. Family
3. Nomad
4. Workers' union

Which of these staten
culture?

1. All men have c
2. Culture change
3. Culture traits a
4. There are man

Which of these is us
anthropology?

1. Observation
2. Participation
3. Questioning
4. Reading

The central theme

1. archeology.
2. culture.
3. geography.
4. language.

Which of these wou
LEAST?

1. Group differen
2. Group similari
3. Physical traits
4. Physical chara

of field study?

roup of people

in a museum

t a group of people

gy in school

t of Kazak social

one's own culture

living by herd

taken down and

is true about cultu

a group of peop

ple are different,
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y be different, cu
erywhere.

Which of these is NOT a form of social organization?

1. Church group
2. Family
3. Nomad
4. Workers' union

Which of these statements is NOT true concerning culture?

1. All men have culture.
2. Culture changes through time.
3. Culture traits are the same everywhere.
4. There are many different cultures.

Which of these is used LEAST in a field study in anthropology?

1. Observation
2. Participation
3. Questioning
4. Reading

The central theme of anthropology is

1. archeology.
2. culture.
3. geography.
4. language.

Which of these would anthropologists study LEAST?

1. Group differences among peoples
2. Group similarities among peoples
3. Physical traits among groups of people
4. Physical characteristics of individuals

33. Which of the following has the LEAST developed technology?

    1. Arunta
    2. Hopi
    3. Kazak
    4. American

34. Mr. Smith left his job in the city and bought a farm. One day Mr. Smith said: "Jack, I want to raise apples in this field. You and Tom take these apple seeds and plant them one foot apart so that we will have plenty of apple bushes. Harry, I want you to sprinkle this flour all over the south field—we'll raise wheat there. Eddie, you take these potato plants I bought, plant them in the north field and roll the tractor over them. I'm wild about mashed potatoes."

    Mr. Smith did NOT have one of the factors of production that he needed. It was

    1. land.
    2. tools.
    3. labor.
    4. know-how.

35. Which sentence below is NOT true about the Arunta and Kazak cultures?

    1. Almost all social organization is based on kinship.
    2. Most of the people are nomads.
    3. The people use tools which we would call primitive.
    4. Governments control the activities of most of the people.

36. Which of these is a part of your enculturation process?

    1. Learning to tie your shoes
    2. Learning to eat a foreign food
    3. Learning to speak a foreign language
    4. Having your tonsils removed

37. Which of these is a cultural universal?

1. Money
2. Permanent houses
3. Recreation
4. School buildings

38. All of these words may be used to describe culture EXCEPT

1. changing.
2. inborn.
3. learned.
4. universal.

39. Which culture has a religion based on Totemism?

1. Arunta
2. American
3. Kazak
4. Hopi

40. A culture that belongs to the faith called Islam is the

1. Arunta
2. American
3. Kazak
4. Hopi

41. People whose religion is based on the Judeo-Christian tradition are the

1. Arunta
2. American
3. Kazak
4. Hopi

42. Religion is a cultural universal. This means that

1. all Americans are religious.
2. some societies have some kind of religion.
3. all societies have some kind of religion.
4. no culture has religion except the American.

43. The God that the Kazak worship is called

1. Koran.
2. Mecca.
3. Allah.
4. Muslim.

44. The Arunta, Kazak, and American cultures are similar because they all

1. worship God.
2. have a religious system.
3. read the Bible.
4. believe in the same religion.

45. Things that people believe are good in a cultu are called

1. values.
2. gifts.
3. games.
4. toys.

46. Anthropologists find that all people share some cultural traits. These common cultural traits are called

1. universals.
2. variations.
3. differences.
4. drives.

47. By studying similarities and differences in the way people live, anthropologists have found that all people

1. make their living in the same way.
2. have the same form of social organiza
3. worship the same gods.
4. do similar things but in different ways

48. An American girl plays with dolls. This is example of learning through

1. role playing.
2. doing a task.
3. talking.
4. rearing.

hich is **not** a way the Arunta children acquire e traits of their culture?

1. Rearing
2. Imitation
3. Tradition
4. Schooling

50. Change is more rapid in which of the following cultures?

1. Arunta
2. American
3. Kazak
4. Hopi

OPTIONAL ITEMS FOR CHAPTER V - CULTURAL DYNAMICS

1. The American culture has had more cultural change than the Arunta culture. The amount of cultural change in any culture depends on the amount of

    1. tradition.
    2. enculturation.
    3. innovation.
    4. religion.

2. The old gentleman said to the boy, "Son, there have been many changes in our technology in the past fifty years, but I'm afraid that social changes have fallen far behind them."
    The old gentleman is talking about

    1. cultural continuity
    2. cultural breakdown
    3. cultural lag
    4. cultural improvement

3. Several inventions, such as the wheel, the pedal, the chain, and others led to invention of the bicycle. The principle that tells us that "every new trait grows from some existing trait" is called

    1. cultural improvement.
    2. cultural continuity.
    3. acculturation.
    4. enculturation.

4. The American boy looked out the window made of glass invented in Egypt. It was raining so he put on overshoes made of rubber discovered by the Central American Indians. The process by which a trait is passed on from one culture to another is called

    1. enculturation.
    2. diffusion.
    3. modification.
    4. automation.

5. The Arunta are **preliterate** people who live in the central desert of Australia. Preliterate people are most often found in cultures which have been

    1. isolated.
    2. diffused.
    3. acculturated.
    4. industrialized.

6. John Hawk is an American Indian who lives a community with his family and many frien John's ancestors used to live on the plains a hunt buffalo. Today, John, his family and frie no longer hunt buffalo. Rather, they work farms, drive cars, go to school, serve in the armed forces, and play baseball.
    The change that took place in John's culture is called

    1. enculturation.
    2. acculturation.
    3. diffusion.
    4. modification.

7. The Kazak have replaced their traditional clan exogamy with a farm exogamy.
    Farm exogamy means that a girl will **not** marry a boy

    1. outside her clan.
    2. outside her farm.
    3. from the same clan.
    4. from the same farm.

8. Which of the following is a nonmaterial invention?

    1. telephone
    2. cotton gin
    3. Islam
    4. automobile

9. Habit, reverence for the past, and vested interest are all **resistances** to cultural change. Which of the following statements shows an attitude in **favor** of cultural change?

    1. "I've been planting corn that way for many years, and I'll be planting it that way years from now."
    2. "Bringing that highway through here would ruin my business."
    3. "Instant frozen food packaging has cut preparation time in the kitchen by about 100%."
    4. "It was good enough for my father; it's good enough for me."

10. Invention and discovery are necessary for a culture to have

    1. social change
    2. technological change
    3. cultural change
    4. all of the above

EXPERIMENTAL MATERIAL, 1968

Developed 1965 by William W. Greene, Jr., under the supervision of Dr. Warren G. Findley; revised 1966 by Marilyn J. McCrary under the supervision of Dr. Albert J. Kingston; Revised 1968 by Robert L. Turknett under the supervision of Dr. Albert J. Kingston and Dr. E. Paul Torrance. To be used in connection with "A Sequential Curriculum in Anthropology, Grades 1-7." The curriculum development reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare, under the provision of the Cooperative Research Program (Contract H-128/OE 4-10-204).

APPENDIX F

CHECK LIST OF TEACHER BEHAVIOR

CHECK LIST OF TEACHER BEHAVIOR

To the Observer: Check whichever behavior is actually observed by you during an observation period of no less than thirty minutes. If it happens that the teacher is supervising groups of pupils engaged in a lesson, attempt to determine teacher behavior by observing the interaction of the pupils and the teacher in the small-group situations. A behavior should be construed as a sequence of acts that might logically be considered as unitary; most of the behaviors listed, however, are confined to single statements and questions. This list is not intended to be an exhaustive catalogue of teacher strategies. In fact, it is quite possible that you will be able to check only a few--or possibly none--of the categories during your observation period. Please familiarize yourself with the categories before you attempt to use this instrument.

Tallies	Behavior
______________	Teacher presents a generalization. (Example: "The social organization of the Arunta is quite different from ours.")
______________	Teacher encourages pupil(s) to generalize about facts that have been discovered or discussed by the class. (Example: "How does their social organization compare to ours?")
______________	Teacher illustrates a generalization with an example. (Example: "The Kazak are being integrated into Soviet economy. Recently, dry farming was introduced in Kazakistan.")
______________	Teacher defines a concept. (Example: "The tribe is an extended lineage group comprised of related clans.")
______________	Teacher asks pupil(s) to clarify a concept. (Example: Is being a member of a tribe like being a member of a club?")
______________	Teacher asks pupil(s) to define a term. (Example: "What does the word tribe mean?")
______________	Teacher asks pupil(s) to put himself in the place of a Kazak or an Arunta. (Example: "Would you enjoy herding the sheep if you were a Kazak boy? Would you get tired of it?")
______________	Teacher describes a process, system, institution, belief, etc. (Example: "During early October, the household begins slowly to move in the direction of its permanent winter camp. With the first snows, the Kazak move quickly to their winter pastures.")
______________	Teacher asks pupil(s) for an explanation of a process, system, institution, belief, etc. (Example: "Why don't the Kazak have a system of government similar to ours?")
______________	Teacher explains the reason for a custom, ceremony, institution, etc. (Example: "The Kazak wait as long as possible before going to their winter camps because the grass there will have to last all through the winter.")
______________	Teacher asks for a reason for an event, situation, fact, process, etc. (Example "Why do the Kazak wait as long as possible before moving to their permanent winter camps?")

APPENDIX G

QUESTIONNAIRE ON STRATEGIES FOR TEACHING THE UNIT ON CULTURE

Anthropology Curriculum Project
Fain Hall, Univ. of Georgia

To the Cooperating Teacher:

This is a brief questionnaire which should not take you more than ten minutes to complete. (If it takes longer, then there is a chance your responses might be influenced by what you think ought to be the way you taught, not the way you did teach.) Would you please rank, from "1" to "10", the teaching strategies listed below? Give a rank of "1" to the strategy which you utilized most often in teaching the Concept of Culture unit. Give a rank of "10" to the strategy which you used least often. Put any comments concerning the materials at the bottom of the page. Please be frank.

Rank	Strategy
___	Asked questions in order to see whether the pupils had gained certain concepts or acquired certain facts.
___	Explained facts that were difficult for the children to understand.
___	Encouraged individual pupils to study materials relating to the unit on their own.
___	Explained key concepts of the unit to the class.
___	Encouraged the class to discuss a fact or a concept that was not understood too well.
___	Encouraged groups of pupils to choose their own topics to study and report on (or to display).
___	Asked questions which were designed to make the children wonder about the customs and traditions of the Kazak and/or Arunta.
___	Drew comparisons between American customs and the customs of the Kazak and/or Arunta.
___	Presented materials which were designed to give the children information about the three cultures that were studied.
___	Presented materials which were designed to cause the pupils to become curious about the Arunta, Kazak, or American cultures and then to search for more information.

Comments: ____

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APPENDIX H

RANKINGS OF DEDUCTIVE AND INDUCTIVE TEACHING STRATEGIES BY FOUR JUDGES

RANKINGS GIVEN BY FOUR JUDGES FOR TEN TEACHING STRATEGIES ON A CONTINUUM FROM DEDUCTIVE TEACHING TO INDUCTIVE TEACHING

Judge A	Judge B	Judge C	Judge D	Combined Ranks	Strategy
3.5	3.5	5	3	3	Asked questions in order to see whether pupils had gained certain concepts or acquired certain facts.
3.5	5	1	1	2	Explained facts that were difficult to understand.
9.5	7.5	9	5	9	Encouraged individual pupils to study materials relating to the unit on their own.
3.5	1	2	2	1	Explained key concepts of the unit to the class.
7	7.5	6	4	6	Encouraged the class to discuss a fact or a concept that was not understood too well.
3.5	6	10	6	8	Encouraged groups of pupils to choose their own topics to study and report on (or to display).
8	9.5	7	7	7	Asked questions which were designed to make the children wonder about the customs of the Kazak and/or Arunta.
3.5	2	4	8	4	Drew comparisons between American customs and the customs of the Kazak and/or Arunta.
3.5	3.5	3	9	5	Presented materials which were designed to give the children information about the three cultures that were studied.
9.5	9.5	8	10	10	Presented materials which were designed to cause the pupils to become curious about the Arunta, Kazak, or American cultures and then to search for more information.

APPENDIX I

TEST DATA FOR CLASSES

Teacher	Grade	Pupils	Pre-Test	Mean Standard Deviation	Post-Test	Mean Standard Deviation
1201	1	26	12.42	3.73	16.77	3.82
1202	1	26	12.62	4.42	20.08	3.97
1203	4	26	22.54	6.74	28.62	7.84
1204	4	26	20.04	4.80	24.08	6.04
1210	1	15	10.73	3.82	21.33	4.88
1220	1	14	9.40	4.35	17.07	6.89
1230	4	56	20.00	5.59	25.20	8.45
1240	4	77	27.61	7.60	36.39	9.38
1250	4	75	27.75	7.49	36.29	9.15
2301	1	16	15.88	3.24	20.56	2.26
2302	4	18	26.67	4.58	29.17	5.21
2310	1	15	16.13	2.63	19.13	3.08
2320	4	16	28.00	9.87	40.06	5.21
3101	1	25	14.64	2.50	20.08	2.91
3102	1	25	17.88	3.46	21.88	2.46
3103	4	27	25.41	6.61	34.63	8.01
3110	1	16	16.50	2.48	20.38	2.80
3120	1	17	14.24	3.78	19.12	3.41
4101	1	21	21.57	2.86	25.76	2.51
4102	4	26	25.27	7.72	35.50	8.42
4110	1	22	19.68	2.42	26.41	1.23
4120	4	25	25.32	5.50	34.40	7.83
5101	1	34	16.74	2.26	22.12	2.84
5102	4	28	25.04	7.11	30.75	8.20
5110	1	59	14.31	2.69	18.36	3.23
5120	4	26	27.54	6.10	37.08	7.59

APPENDIX J

SCORES OF PARTICIPATING TEACHERS ON RUNNER INVENTORY

Scores for 30 Elementary School Teachers in Georgia, California, Illinois, Michigan, and Missouri on Twelve Orientations Derived from the Runner Interview Schedule III

Teacher	Eo	Ru	Io	Pl	Pw	Pc	X	Hl	Re	Sa	T	Pa
1201	4	9	5	5	2	4	6	4	6	4	5	4
1202	5	7	8	1	1	4	0	4	5	9	0	7
1203	6	2	3	4	1	6	4	4	5	8	4	7
1204	7	4	5	2	0	6	5	7	3	9	4	8
1210	1	8	6	1	1	4	2	5	6	6	0	3
1220	6	1	1	1	0	1	1	0	6	1	0	0
1230	3	6	6	6	4	8	3	1	4	4	3	2
1240	7	5	6	4	5	7	2	10	7	10	5	10
1250	7	8	4	4	1	6	1	2	2	7	5	5
2301	10	4	10	2	2	6	4	0	4	10	5	8
2302	6	3	6	2	5	4	3	1	3	4	5	2
2310	9	1	7	0	3	7	0	3	5	6	5	7
2320	4	4	7	6	2	7	8	5	5	5	0	7
2401	4	1	6	0	5	1	2	1	4	3	3	2
2402	5	5	2	0	0	2	1	1	1	9	2	2
2410	3	3	2	2	4	1	5	0	4	5	5	0
2420	5	3	7	5	6	6	6	2	7	4	3	3
3101	8	2	6	2	4	5	4	5	7	8	4	4
3102	6	5	6	6	3	4	5	6	6	8	5	9
3103	10	2	9	0	5	6	4	3	8	6	3	5
3110	4	6	6	4	1	3	5	5	4	5	5	3
3120	6	1	6	1	2	4	0	1	3	4	1	2
4101	6	7	6	1	2	1	2	5	6	7	5	6
4102	9	2	9	0	0	9	0	0	6	5	3	8
4110	8	4	6	6	0	7	2	2	7	9	5	9
4120	8	6	8	3	5	9	3	3	4	8	5	8
5101	8	1	9	0	7	0	4	1	4	3	4	0
5102	4	1	7	9	2	7	2	6	4	2	5	5
5110	6	7	8	7	3	7	0	6	5	7	5	6
5120	5	3	6	0	1	2	0	1	6	5	4	9

Symbols:

Eo = Experimental Orientation
Ru = Rules Orientation
Io = Intuitive Orientation
Pl = Planfulness
Pw = Power Orientation
Pc = Passive Compliance
X = Extroversion
Hl = Hostility
Re = Resistance to Social Pressure
Sa = Social Anxiety
T = Pleasure in Tool-Implemented Hand Skills
Pa = Performance Anxiety

APPENDIX K

ITEM ANALYSIS INFORMATION FOR COMPOSITE FORM I AND COMPOSITE FORM IV

ITEM ANALYSIS INFORMATION ON COMPOSITE FORM I POST-TESTS

Item Number	Point Biserial Correlation of Item with			
	Proportion Answering Item Correctly	Standard Deviation of Item	Total Test Score	Reliability Index
1	0.913	0.282	0.567	0.160
2	0.639	0.480	0.509	0.245
3	0.692	0.462	0.472	0.218
4	0.229	0.420	0.546	0.229
5	0.732	0.443	0.370	0.164
6	0.692	0.462	0.547	0.252
7	0.774	0.418	0.580	0.243
8	0.918	0.274	0.675	0.185
9	0.432	0.495	0.600	0.297
10	0.789	0.408	0.485	0.198
11	0.663	0.473	0.509	0.240
12	0.516	0.500	0.482	0.241
13	0.445	0.497	0.153	0.076
14	0.858	0.349	0.665	0.232
15	0.732	0.443	0.547	0.242
16	0.839	0.367	0.580	0.213
17	0.808	0.394	0.566	0.223
18	0.442	0.497	0.455	0.226
19	0.889	0.314	0.452	0.142
20	0.453	0.498	0.457	0.227
21	0.918	0.274	0.483	0.132
22	0.576	0.494	0.325	0.161
23	0.758	0.428	0.596	0.255
24	0.500	0.500	0.572	0.286
25	0.758	0.428	0.504	0.216
26	0.361	0.480	0.116	0.055
27	0.932	0.252	0.662	0.167
28	0.939	0.238	0.696	0.166
29	0.882	0.323	0.561	0.181
30	0.408	0.491	0.533	0.262

ITEM ANALYSIS INFORMATION ON COMPOSITE FORM IV POST-TESTS

	Point Biserial Correlation of Item with			
Item Number	Proportion Answering Item Correctly	Standard Deviation of Item	Total Test Score	Reliability Index
1	0.861	0.346	0.329	0.114
2	0.687	0.464	0.450	0.209
3	0.885	0.319	0.391	0.125
4	0.477	0.499	0.121	0.061
5	0.623	0.485	0.314	0.152
6	0.773	0.419	0.547	0.229
7	0.787	0.409	0.439	0.180
8	0.890	0.313	0.548	0.171
9	0.729	0.445	0.483	0.215
10	0.430	0.495	0.066	0.033
11	0.465	0.499	0.574	0.287
12	0.597	0.491	0.443	0.217
13	0.645	0.478	0.594	0.284
14	0.780	0.414	0.428	0.177
15	0.528	0.499	0.459	0.229
16	0.883	0.322	0.465	0.150
17	0.792	0.406	0.485	0.197
18	0.667	0.471	0.516	0.243
19	0.259	0.438	0.249	0.109
20	0.672	0.469	0.375	0.176
21	0.474	0.499	0.212	0.106
22	0.819	0.385	0.532	0.205
23	0.545	0.498	0.516	0.257
24	0.457	0.498	0.344	0.171
25	0.421	0.494	0.430	0.212
26	0.751	0.433	0.551	0.239
27	0.636	0.481	0.561	0.270
28	0.560	0.496	0.339	0.168
29	0.648	0.478	0.560	0.267
30	0.472	0.499	0.371	0.185
31	0.528	0.499	0.395	0.197
32	0.445	0.497	0.466	0.231
33	0.594	0.491	0.574	0.282
34	0.606	0.489	0.450	0.220
35	0.496	0.500	0.522	0.261

ITEM ANALYSIS INFORMATION ON COMPOSITE FORM IV POST-TESTS (Continued)

	Point Biserial Correlation of Item with			
Item Number	Proportion Answering Item Correctly	Standard Deviation of Item	Total Test Score	Reliability Index
36	0.384	0.486	0.444	0.216
37	0.394	0.489	0.308	0.151
38	0.477	0.499	0.326	0.163
39	0.379	0.485	0.379	0.184
40	0.499	0.500	0.349	0.174
41	0.457	0.498	0.249	0.124
42	0.467	0.499	0.448	0.224
43	0.438	0.496	0.307	0.152
44	0.531	0.499	0.555	0.277
45	0.692	0.462	0.596	0.275
46	0.357	0.479	0.369	0.177
47	0.623	0.485	0.613	0.297
48	0.423	0.494	0.437	0.216
49	0.623	0.485	0.503	0.244
50	0.631	0.483	0.525	0.253
51	0.269	0.443	0.312	0.138
52	0.391	0.488	0.256	0.125
53	0.203	0.402	0.102	0.041
54	0.342	0.474	0.324	0.154
55	0.335	0.472	0.451	0.213
56	0.232	0.422	0.024	0.010
57	0.191	0.393	0.313	0.123
58	0.526	0.499	0.449	0.224
59	0.396	0.489	0.156	0.076
60	0.244	0.430	0.041	0.018